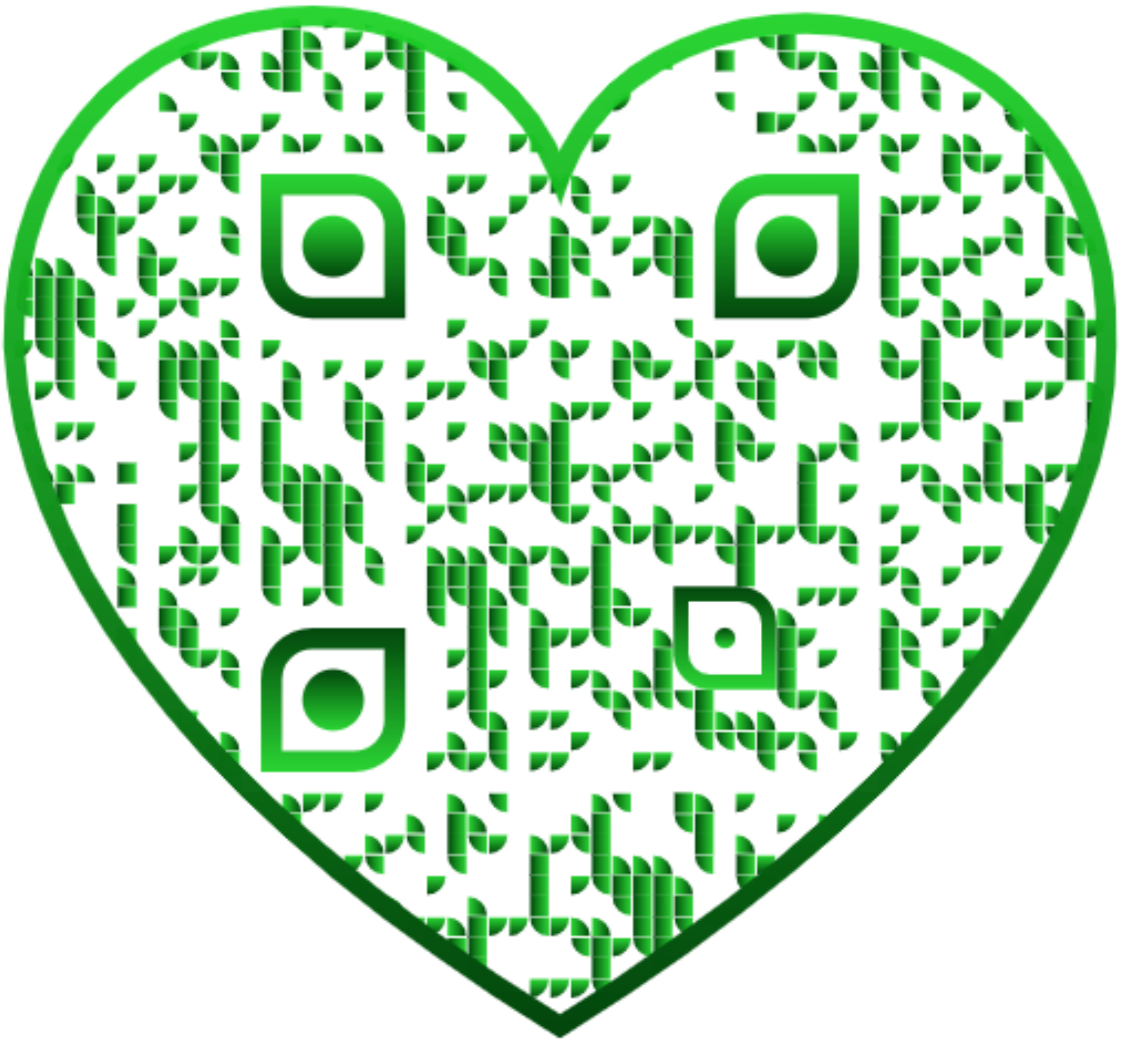
COC PREPARATION

1. A-50-year-old man has a history of frequent episodes of renal colic with **high calcium** renal stones. The most useful agent in the treatment of recurrent calcium stones is:

   A. Mannitol B. Spironolactone
   C. **Furosemide** D. Hydrochlorothiazide

- Furosemide categorize as **loop Diuretics**
- Used for Treatment of **hyperkalemia** & **hypertensive emergency** & **pulmonary edema**.
- **MOA**- inhibits re absorption of sodium and chloride ions at proximal and distal renal tubules and loop of Henle; by interfering with chloride-binding co-transport system, causes increases in water, calcium, magnesium, sodium, and chloride.
- **Contraindications** -Documented hypersensitivity to furosemide or sulfonamides.
- Dietary factors, high doses of vitamin D, intestinal bypass surgery and several metabolic disorders can increase the



concentration of calcium or oxalate in urine. Calcium stones may also occur in the form of calcium phosphate. This type of stone is more common in metabolic conditions, such as renal tubular acidosis.

2. All of the following statements about **efficacy** and **potency** are true except:

A. Efficacy is usually a more important clinical consideration than Potency
B. Efficacy is the maximum effect of a drug
C. Potency is a comparative measure, refers to the different doses of two drugs that are needed to produce the same effect
D. The ED so is a measure of drug's efficacy

- **efficacy** in **pharmacology** is the maximum response achievable from an applied or dosed agent
- the definition of efficacy has been object for discussion
- In **medicine**, **efficacy** is the capacity for beneficial change (or therapeutic effect of a given intervention
- **Potency** in **pharmacology** is a measure of drug activity expressed in terms of the amount required to produce an effect of given intensity. A highly potent drug.

3. Which of the following is a type of drug-to-drug interaction which is related with processes of **absorption**, **biotransformation**, **distribution** and **excretion**?

A. Pharmaco dynamics interaction
B. Physical and chemical interaction
C. Pharmaceutical interaction
D. Pharmacokinetic interaction

4. For therapeutic application, local anesthetics are usually made available **as salt forms**. The major reason of making salt form of these drugs is to make:

A. Less toxicity and higher potency
B. More stability and greater water solubility
C. Higher stability and greater lipid solubility

D. Less local tissue damage and more potency

- For the **local anesthetic** base to be **stable** in solution, it is formulated as a **hydrochloride salt**. As such, the molecules exist in a quaternary, **water-soluble** state at the time of injection

5. The primary mechanism of action (MOA) of local anesthetics is:

A. Activation of ligand-gated potassium channels
B. Blockade of voltage-gated sodium channels
C. Stimulation of voltage-gated N-type calcium channels
D. Blockade the GABA-gated chloride channels

- LA drugs act mainly by **inhibiting sodium** influx through sodium-specific ion channels.
- In particular the so-called **voltage-gated** sodium channels.

6. All of the following are possible symptoms of **atropine poisoning** except:

A. Mydriasis, cyclopedia
B. Hyperthermia, dry mouth, hot and flushed skin
C. Agitation and delirium
D. Bradycardia, orthostatic hypotension

- **Atropine** is a medication used to treat certain types of **nerve** agent.
- In general, **atropine** counters the "rest and digest" activity of glands regulated by the **parasympathetic nervous system.**
- Common side effects include a **dry mouth**, **large pupils**… **Fast hear rate** …

7. Selective al receptor antagonists such as **tamsulosin**, **terazosin**, and **alfuzosin** are very effective in the management of:
   A. Hyperthyroidism
   B. Benign prostatic hyperplasia (BPH)
   C. Cardiac arrhythmias
   D. Heart failure

- **Tamsulosin**, sold under the trade name Flomax among others, is a medication used to treat symptomatic

benign prostatic hyperplasia **(BPH)** chronic prostatitis and

- To help with the passage of **kidney stones**.
- The evidence for benefit with a kidney stone is better when the **stone** is **larger**. It is taken by mouth.
- **MOA** - Blocks **alpha-1**a adrenergic receptor in smooth muscle of prostate, decreasing bladder neck and urethral resistance
- **Common side effect…** include dizziness, headache, sleepiness, nausea, blurry vision

8. **Propranolol** can be used in the treatment all of the following diseases **except**:

   A. Cardiovascular diseases
   B. Migraine headache
   C. Hyperthyroidism
   D. **Bronchial asthma**

- **Propranolol is** Beta blocker class
- Medical uses ---- Cardiovascular (Hypertension – Angina pectoris)
- **Others**(Essential tremor**-**Evidence for use for **akathisia** - Migraine and cluster headache - prevention and in primary

exertional headache **Hyperhidrosis** (excessive sweating)

- **Contraindications - asthma** or chronic obstructive pulmonary disease **(COPD)**Slow heart rate (bradycardia) Sick sinus syndrome
- Atrio ventricular block &Shock

9. Which of the following is true about **Metoprolol** and **Atenolol**?

A. **Are members of the B_1-selective group-insomnia?**
B. Are nonselective ß-antagonists
C. Have intrinsic sympathomimetic activity
D. Have an anesthetic action

- **Medical uses**
- **Metoprolol** is used for a number of conditions, including hypertension, angina (acute myocardial infarction supraventricular tachycardia, ventricular tachycardia, congestive heart failure (, and prevention of migraine headaches.
- **Atenolol is** used for a number of conditions including hypertension, angina, long QT syndrome, acute myocardial infarction, supraventricular tachycardia, ventricular tachycardia, and the symptoms of alcohol withdrawal
- **MOA-** Blocks response to beta-adrenergic stimulation;

cardio selective for **beta-1** receptors at low doses, with little or no effect on beta2 receptors.

- **Atenolol & Metoprolol** Used for as treatment **of ATHSMA**

10. Which one of the following therapeutics agent are Used in the treatment of **insomnia?**

A. Benzodiazepines C. Imidazopyridines
B. Barbiturate **D. all the above**

- **Benzodiazepines** – medical use --possess psycholeptic, sedative, hypnotic, anxiolytic.
- **contraindications**
- Because of their muscle relaxant action, benzodiazepines may cause respiratory depression in susceptible individuals. For that reason, they are contraindicated in people with myasthenia gravis, sleep apnea, bronchitis, and COPD**.**
- **Barbiturate is** a drug that acts as a central nervous system depressant. Barbiturates are effective as anxiolytics, hypnotics, and anticonvulsants,
- **Imidazopyridines --**In general, they are GABAa receptor agonists, however recently proton pump inhibitors, aromatase inhibitors, NSAIDs and other classes of drugs in this class have been developed as well.

11. Barbiturates are used in the emergency treatment of Status epilepticus in infants and children because of:

A. They protecting cerebral edema and ischemia
B. Short onset and duration of action
C. They do not have effect on sleep architecture
D. All of the above

- **Barbiturates** are effective drugs in the treatment of epileptic disorder
- **BARBITURATE** administration has been reported to have a "protective" effect on the brain in cerebral ischemia and hypoxia.
- **Barbiturates** have been shown to inhibit the formation of cerebral edema produced by cryogenic injury.

12. The main reason for giving levodopa, the precursor Of dopamine, instead of dopamine in the Management of Parkinson's disease is:

A. Dopamine does not cross the blood-brain barrier

B. Dopamine may induce acute psychotic reactions
C. Dopamine is intensively metabolized in humans
D. All of the above

- **Dopamine --** most commonly used in the treatment of very low blood pressure, a slow heart rate that is causing symptoms.
- **Dopamine Contraindications (Dopamine** should generally not be given to people who have a pheochromocytoma or uncorrected very fast heart rate.)
- Why can dopamine not cross BBB?(This is because the dopamine molecule is **too polar** to cross the blood-brain barrier, and thus cannot enter the brain. The most common treatment used contains the chemical Levodopa.)
- **L-DOPA** crosses the protective blood-brain barrier, whereas **dopamine** itself cannot. Thus, **L-DOPA** is used to increase dopamine concentrations in the treatment of Parkinson's disease, Parkinsonism, dopamine-responsive dystonia and Parkinson-plus syndrome.

13. Select the agent, which is **preferred** in the treatment Of the drug-**induced** form of parkinsonism:

A. Levodopa
B. **Benztropine**
C. Bromocriptine
D. Dopamine

- Benz atropine, also spelled benztropine, is a medication used to treat a type of movement disorder due to antipsychotics known as **dystonia** and **Parkinsonism**. It is not useful for tardive dyskinesia.

14. Which one of the following is a **non-narcotic Analgesic**, which **lacks** an anti-inflammatory effect?

A. Diclofenac C. **Paracetamol**
B. Ibuprofen D. Aspirin

- Narcotic analgesics are usually administered for the relief of **severe pain** associated with fractures, burns, renal colic, coronary occlusion, etc., while the non-narcotic analgesics are generally given for headaches, muscular aches and pains of inflammatory origin.

15. In which of the following disease conditions could **Aspirin** be used prophylactically?

A. No carcinogenic pulmonary embolism
B. Peptic ulcers
C. Atherosclerosis
D. Ischemic stroke

- In people who have had a myocardial infarction or those with a high cardiovascular risk, it provides some protection against a first stroke.
- In those who have previously had a stroke, treatment with medications such as aspirin, clopidogrel, and dipyridamole may be beneficial.
- The U.S. Preventive Services Task Force (USPSTF) recommends against screening for carotid artery stenosis in those without symptoms.

16. Which one of the following is a **semisynthetic** weak opioid analgesic?

A. **Tramadol**
C. Morphine
B. Sodium valproate
D. Butorphanol

- **Natural** opioids (including **morphine** and **codeine**) and **semi-synthetic** opioids (drugs like oxycodone, hydrocodone, hydromorphone, and oxymorphone) **Methadone**, a synthetic opioid. Synthetic opioids other than methadone (drugs like **tramadol** and **fentanyl**)

17. The most important counseling information to Convey to a 40-year-oldman taking **omeprazole** for An **NSAID**-**induced** ulcer is

A. Take the omeprazole at the same time you take the NSAID.
B. Take the omeprazole 15 to 30 minutes before breakfast.
C. Take the omeprazole 1 hour before or 2 hours after a meal.
D. Take omeprazole at bedtime.

- Histamine (H2) antagonists, **omeprazole(proton pump inhibitor)**, sucralfate and E-prostaglandin (PGE) analogs are effective for the treatment of **NSAID**-**induced** gastric and duodenal ulcers.
- Non steroidal anti-inflammatory drugs (**NSAIDs**) are a class of medication primarily used to treat **pain**, **fever**, and **inflammation**.
- **Aspirin** may also be used to prevent heart attacks or stroke.

18. A person with a fasting plasma glucose value of **120** Mg/dL and a post- OGTT**2-hour** plasma glucose value

Of **135** mg/dL would be characterized as having

A. Impaired glucose tolerance
B. Impaired fasting glucose
C. Type 2 diabetes mellitus
D. Normal serum glucose level

- **Impaired fasting glucose** (fasting plasma glucose 6.1 to 6.9 mmol/L [110 to 125 mg/dL]) is a common glycemic disorder which usually progress to diabetes mellitus.
- Less than 100 mg/dL = normal.
- Between 110–125 mg/dL = impaired fasting glucose (i.e., pre diabetes)
- Greater than 126 mg/dL on two or more samples = diabetes.

Table 5.1.2. Current diagnostic criteria for diabetes mellitus

Diagnostic test	Pre-diabetes	Diabetes	Remarks
Fasting blood glucose	100-125mg/dl	≥126 mg/dl	At least 2 tests needed*
Hemoglobin A1C#	5.7-6.4%	≥ 6.5%	At least 2 tests needed*
02-hour plasma glucose	140-199mg/dl	≥200mg/dl	At least 2 tests needed
Random blood glucose		≥200mg/dl	Only classic symptoms of hyperglycemia or hyperglycemic crisis

**If both fasting blood sugar and hemoglobin A1C are done initially and both are in the diabetic range, repeat test is not necessary for the diagnosis.*

 # If there is significant discrepancy between HbA1C and blood glucose measurements, use the blood glucose level.

19. Which of the following is a **risk factor for** Development of type **2diabetes** mellitus?

A. Low serum uric acid concentration
B. Heart failure
C. Acute renal failure
D. History of gestational diabetes mellitus

- Risk Factors for Type 2 Diabetes**(**High blood pressure --- Gestational **diabetes ---Heart disease ----obesity)**
- Risk factor for type 1 Diabetes (genetic ---viral infection- early diet.)

20. Which of the following describes a situation in which **Metformin** therapy should be **withheld** either Temporarily or permanently?

A. Receipt of oral contrast material for an upper GI series
B. Development of advanced renal insufficiency
C. Onset of a short, self-treated viral illness
D. New-onset stage A heart failure not requiring pharmacologic therapy

- Due to their greater vulnerability to metformin side effects, the following people are usually not given **metformin**:
- Those with stage 4 or 5 kidney disease.
- People with Type 1 diabetes.
- Older adults with pre diabetes.
- People currently experiencing diabetic ketoacidosis.
- People with certain liver problems.

21. Which of the following is **first** line and associated With a **lower** risk for all-cause mortality and cardiovascular mortality in **obese** patients with type 2diabetes mellitus?

A. Glyburide

B. Metformin

C. Insulin

D. Piogitazone

- **Metformin** significantly reduces insulin resistance and improves glycemic control without inducing weight gain, and even favoring some weight loss.
- This **biguanide** is now considered as the **first** line drug for the **obese** diabetic patient.

22. **Enalapril** may be preferable to **captopril** because:

A. It is less likely to induce hypotension in patients on diuretic therapy.

B. It is a newer ACEI and therefore must be better

C. It has a longer half-life allowing once daily dosing for hypertension

D. It has a slightly different side effect profile

- As compared with **captopril**, **enalapril** has a greater affinity for the converting enzyme and a more prolonged duration of action.

23. Which of the following is a **preferred initial**

Antihypertensive therapy for a 63-year-old woman who was diagnosed with **hypertension** and has a History of **ischemic** stroke (6 months ago), with a BP Of **166/108** and **164/106** mm Hg in two consecutive Measurements?

A. A thiazide-type diuretic with an ACE inhibitor
B. A thiazide-type diuretic with a nonselective B-blocker
C. An ARB alone
D. A thiazide-type diuretic alone

24. Among drugs affecting **gastrointestinal** function all Of The following medications are not recommended For Patients complaining **constipation** except:

A. Anticholinergics drugs
B. Opiates
C. Magnesium antacids
D. Aluminum containing antacids

- **Magnesium** helps to increase the amount of water in the intestines, which can help with bowel movements.
- It may be used as a **laxative** due to these properties.

- **Aluminum** causes constipation,
- **magnesium** induces diarrhea, and
- **calcium** has no definite motor effect

25. Which of the following would be the best regimen to Initiate for 50 years old male patients having **Diabetes** mellitus, **hypertensive** and **stage3** chronic Kidney diseases?

A. ACEI plus loop diuretic
B. CCB plus B-blocker
C. ACEI plus thiazide diuretic
D. B-blocker plus loop diuretic

- **Classification of Chronic Kidney Disease**

Stage	Description	GFR (mL/min/1.73 m^2)
0	With risk factors for CKD	>90
1	Kidney damage with normal or ↑ GFR	≥90*
2	Kidney damage with mild ↓ GFR	60-89
3	Moderate ↓ GFR	30-59
4	Severe ↓ GFR	15-29
5	Kidney failure (ESRD)	<15

26. Which of the following is/are potential reasons for a more rapid progression of **renal failure** among Patient with pre-existing renal problem?

A. Poorly controlled hypertension
B. Volume depletion
C. Use of nephrotoxic drugs
D. All of the above

27. Which one of the following is the most common **Gastrointestinal** symptom that accompanies Migraine attack?

A. Constipation
B. Nausea/vomiting
C. Diarrhea
D. Abdominal bloating

- **Nausea** and **vomiting** are often associated with migraine attacks.
- And research suggests that people with frequent headaches may be more likely to develop gastrointestinal disorders.
- In young children, several syndromes that cause gastrointestinal symptoms are also associated with

migraines.

28. Which of the following would not be appropriate for **Migraine prophylaxis**?

A. Selective B-blockers
B. B-blockers with intrinsic sympathomimetic activity
C. Anticonvulsants
D. Calcium channel blockers

- **B-blockers Propranolol** is the most **common** and one of the **most** effective **first**-**line** medications used for migraine prophylaxis.
- **Anticonvulsant** drugs seem to be useful in clinical practice for the prophylaxis of migraine.
- This might be explained by a variety of actions of these drugs in the central nervous system that are probably relevant to the pathophysiologic of migraine.
- the cardio-**selective** beta-blockers include **atenolol**, **betaxolol**, **metoprolol**, and **nebivolol**

29. Guidelines for drug therapy of **epilepsy** during Pregnancy includes:

A. Supplementation of 100 mcg folic acid daily

B. Substitution of phenobarbital for other drugs
C. Use of antiepileptic drug monotherapy if possible
D. Drug withdrawal 1 month prior to attempted conception

30. Which one of the following is the **preferred** drug for The initial treatment of **migraine** in pregnancy Woman?

A. Indomethacin
B. Acetaminophen
C. Sumatriptan
D. Codeine

- **Non drug therapies** (relaxation, sleep, massage, ice packs, and biofeedback) should be tried first to treat migraine in women who are pregnant. For treatment of acute migraine attacks 1000 mg of paracetamol (**acetaminophen**) preferably as a **suppository** is considered the **first** choice drug treatment.

31. Which one of the following is the common indication Of **antenatal corticosteroid** administration is to for Some pregnant women?

A. Stop preterm labor
B. Treat maternal **group B** Streptococcus infection
C. Prevent neonatal respiratory distress syndrome
D. Augment labor analgesia

- **Antenatal steroids**, also known as antenatal corticosteroids, are medications administered to pregnant women expecting a **preterm** birth.
- When administered, these steroids accelerate the maturation of the fetus' lungs, which reduces the likelihood of infant respiratory distress syndrome and **infant mortality**.
- The effectiveness of this corticosteroid treatment on humans was first demonstrated in 1972 by Sir Graham Liggins and Ross Howie, during a randomized control trial using betamethasone.

32. **Bacterial** organisms responsible for the most Common causes of infectious diarrhea include all of The following except:

A. Escherichia coli
B. Staphylococcus species
C. Salmonella species
D. Shigella species

- The most common type of **Staphylococcus** infection is the **boil**.

- This is a pocket of pus that develops in a hair follicle or oil gland.
- The skin over the infected area usually becomes red and swollen

33. Woman who is 6 weeks **post-partum** and **breast-Feeding** seeks contraception. She would like to have another child in the next 1 year.

Which of the Following is the **preferred** method of contraception for this woman?

A. Combined oral contraceptive
B. Progestin-only pill
C. Depo-medroxyprogesterone acetate
D. Transdermal contraceptive

- The progestin-only pill is better than regular birth control pills if you **are breast-feeding** because the mini-pill will not change your milk production.
- The mini-pill may be safer for some women to use.

34. A 23-year-old frantic woman comes to the pharmacy asking for help in choosing a home pregnancy test. She said that her partner's condom was broken during

intercourse last night and she worried that she might be pregnant.

She started her last period 18 days ago. You recommend that she ?

A. Do not worry the chance to be pregnant is very rare
B. Provide emergency contraception
C. Discus with her doctor for an additional method of hormonal contraception
D. Purchase a home pregnancy test to use if her period is late

- **Emergency** contraception refers to methods of contraception that can be used to prevent pregnancy after sexual intercourse.
- These are recommended for use **within 5 days** but are more effective the sooner they are used after the act of intercourse.

35. A male patient complains that he is **unable** to have Satisfactory inter course with his wife because his Penis cannot get erect. This patient has which type of Sexual dysfunction?

A. Decreased libido
B. Premature ejaculation
C. Erectile dysfunction
D. Infertility

- **Erectile dysfunction** can be a sign of a physical or psychological condition.
- It can cause stress, relationship strain and low self-confidence.
- The **main symptom** is a man's inability to get or keep an erection firm enough for sexual intercourse.

36. When a systemic **antibiotic** is needed for the Management of **gestational acne**, which one is the Safest option?

A. Erythromycin
B. Tetracycline
C. trimethoprim-sulfamethoxazole
D. Ciprofloxacin

- **Gestation** is the period of development during the carrying of an embryo.
- **Acne** is a skin condition that occurs when your hair follicles become plugged with oil and dead skin cells.
- **Erythromycin** (drug class - **Macrolide** antibiotic)

- Erythromycin is an antibiotic used for the treatment of a number of bacterial infections.
- This includes **respiratory** tract infections, **skin** infections, chlamydia infections, **pelvic** inflammatory disease, and syphilis.

37. Which one of the following statements is **incorrect** About different types of **iron** preparation?

A. A 325mg tablet of **ferroussulfate** contains 65mg of elemental iron.
B. A 300mg tablet of **ferrousgluconate** contains 35mg of elemental iron.
C. A 325mg tablet of ferrous sulfate contains 35mg of elemental iron.
D. A 100mg tablet of **ferrous fumarate** contains 33mg of elemental iron**Trimethoprim-sulfamethoxazole**

Iron Salt	Dose per tablet	Elemental iro
Ferrous Fumarate	200mg	65mg
Ferrous Gluconate	300mg	35mg
Ferrous Sulphate (dried)	200mg	65mg
Ferrous Sulphate	300mg	60mg
FerrousFeredetate (Sytron)	190mg / 5ml elixir	27.5 mg / 5ml

38. Which of the following change in **white blood** cell Count is the most **indicative** of a bacterial infection?

A. Increase in lymphocytes
B. Increase in immature neutrophils
C. Increase in eosinophils
D. Increase in mono cytes

- An increase in **immature neutrophils** in the blood is often **a sign of infection.**
- It can also be caused by other issues, including injury, physical stress, and cancer.
- Some specific causes of an increased neutrophil count (neutrophilia) include: Infections. Stress11. Blood cell-related cancers such as leukemia.

39. A 15-year-old male presents to the emergency Department with a **bite** wound to his **forearm** Obtained during a playful fight with his younger Brother. The wound is cleaned and shows **no signs** of Infection. Appropriate management this time would Be:

A. Amoxicillin/clavulanic acid for 3-5 days
B. Cephalexin for 5-10 days
C. Erythromycin for 7-10 days
D. No antimicrobial therapy, but keep the wound clean and covered.

- **Amoxicillin-clavulanate** is empiric therapy for treatment of human bite wounds.
- **Ampicillin-sulbactam**is an alternative that can be administered intravenously.
- If a child is bitten by another child at the child care center, here is what a child care practitioner should do: If the skin is not broken, clean the wound with soap and water. Apply a cold compress and gently soothe the child.

40. Altered mental status, change in eating habits, or GI Symptoms as opposed to typical manifestations of Urinary tract infections are frequently seen in which Patient population?

A. Children
B. Pregnant females
C. Elderly men
D. Any young women

- The elderly most commonly will present with altered mental status due to stroke, infection, drug-drug interactions, or alterations in the living environment.

41. A 6-year-old elementary school student seen in the Clinic is found to have **lice infestation** of the **scalp**. Measures to eradicate the infection in the patient And the rest of the family includes:

A. Calamine lotion with 1% menthol and sterilization of all beddingand clothes.
B. Sulfur ointment and sterilization of all bedding and clothes.
C. **Permethrin 1% solution and sterilization of all bedding and clothes**.
D. Permethrin 5% cream and sterilization of all bedding and clothes.

- **Permethrin** lotion 1% is approved by the FDA for the treatment of **headlice**.
- Permethrin is safe and effective when used as directed.
- Permethrin kills live lice but not unhatched eggs.
- Permethrin may continue to kill newly hatched lice for several

days after treatment

42. All of the following should be assessed daily in a Patient with **acute renal injury**, except?

A. Liver aminotransferases
B. Weight
C. Serum creatinine
D. Urine output

- Acute kidney injury (AKI) is suspected when **urine output** falls or **serum blood** urea nitrogen (BUN) and **creatininerise**.
- **Liver aminotransferase associated with CKD.**

43. The reason that **trooping** is preferred over creatinine Kinase (CK) in the diagnosis of myocardial infarction (MI) is that:

A. Proponing increases and decreases more quickly than CK-MB.
B. Proponin stays elevated shorter compared to CK-MB.

C. CK is more specific for myocardial cell necrosis than CK-MB.

D. **Troponin is more specific for myocardial cell necrosis than CK**.

- **Troponin** is a type of protein found in the muscles of your heart.
- Troponin isn't normally found in the blood.
- When heart muscles become damaged, troponin is sent into the bloodstream.
- As heart damage increases, greater amounts of troponin are released in the blood.
- **Why Troponin**I is a better cardiac marker than creatine kinase MB for myocardial infarction?
- (1) troponin I is a better cardiac marker than CK-MB for myocardial infarction because it is equally sensitive yet more specific for myocardial injury;
- (2) Troponin T is a relatively poorer cardiac marker than CK-MB because it is less sensitive and less specific for myocardial injury.
- (3) Both troponin I and troponin T may be used as independent prognosticators of future cardiac events.

44. All of the following therapeutic options would be Reasonable to **overcome diuretic resistance** in a

Patient currently taking **furosemide** 40 mg orally Twice a day except:

A. Changing to spironolactone 25 mg daily
B. Increasing the dose of furosemide to 80 mg orally twice daily.
C. Changing to furosemide 40 mg IV twice daily
D. Adding hydrochlorothiazide 25 mg orally once daily

- **Diuretic resistance** implies a failure to increase fluid and sodium (Na+) output sufficiently to relieve volume overload, edema, or congestion, despite escalating doses of a loop diuretic to a ceiling level (80 mg of furosemide once or twice daily or greater in those with reduced glomerular filtration rate or heart failure.)

45. MW is diagnosed with a left lower **extremity** deep Vein thrombosis (DVT) and is initiated on enoxaparin and Warfarin therapy. How long should **enoxaparin** And **Warfarin** be over lapped?

A. For at least 4 days as long as the International Normalized Ratio(INR) is greater than 2.0
B. For at least 5 days and until the INR is greater than 2.0

C. For at least 7 days and until the INR is greater than 2.0
D. Enoxaparin therapy can be discontinued once INR is greater than 2, regardless of the length of therapy.

- **Enoxaparin**-**Warfarin** If immediate therapeutic anticoagulation is desired: Overlap therapeutic enoxaparin dose with warfarin for at least 5 days and until INR is in therapeutic range for 24 hour.

46. A 74-year-old female patient has **systolic heart Failure** with a presumed etiology of hypertension. She has minimal SOB and dyspnea on exercise (DOE) and trace pedal edema. She complains of a **Dry Cough** that has been present since she began Treatment for heart failure, and she finds the cough Moderately bothersome. Her current medications Include **enalapril** 10 mg. twice daily, **carvedilol** 12.5 Mg twice daily, and **furosemide** 20 mg daily.

Which of the following would be most appropriate to **Alleviate** the **cough** of this patient?

A. Reduce the carvedilol dose

B. Recommend an OTC cough drug containing dextromethorphan

C. Discontinue enalapril and start candesartan

D. Discontinue enalapril and start hydralazine-nitrate combination,

- **Enalapril (ACEI) most common side effect is dry cough.**
- **Candesartan (ARB) replacement of enalapril due to side effect.**

47. Which of the following statements is **false** regarding the white blood cell count (WBC) and differential?

A. Left shift is defined as an increase in immature neutrophils or bands

B. Leukopenia might be occurred secondary to certain medications.

C. The WBC is always elevated in response to any infection

D. The WBC differential is key to determining whether an infection is present.

48. BM is admitted to internal medicine ward and he is on 4th day of spontaneous bacterial peritonitis (SBP) treatment, and his **ascetic** fluid has begun to re-Accumulate, but it is not painful.

Which regimen is the most appropriate therapy to treat the **ascites**?

A. Propranolol 10 mg orally twice daily
B. Furosemide 20 mg IV every 6 hours and repeat paracentesis
C. Spironolactone 100 mg and furosemide 40 mg orally.
D. Aldosterone 100 mg and furosemide 50 mg IV

- **Ascites** - the accumulation of fluid in the **peritoneal** cavity, causing abdominal swelling.
- **Diuretics** have been the mainstay of treatment of ascites since the 1940s when they first became available.
- **Spironolactone** is the **drug of choice** in the initial treatment of **ascites** due to cirrhosis.The initial daily dose of 100 mg may have to be progressively increased up to 400 mg to achieve adequate natriuretic.
- **Furosemide It** is generally used as an **adjunct** to **spironolactone**

treatment **because** of its low efficacy when used alone in cirrhosis.

- The **initial** dose of furosemides is **40** mg/day and it is generally increased every 2–3 days up to a dose not exceeding 160 mg/day.

49. KP is a 64-year-old woman with a history of **ischemic stroke** several months ago. She was previously prescribed **aspirin325** mg daily but developed an **allergy** to **aspirin** and stopped taking it 2 days ago.

    Which one of the following is the most appropriate recommendation at this time?

    A. Make no change at this time
    B. Reduce aspirin dose from 325 mg daily to 81 mg daily
    C. Discontinue aspirin and begin clopidogrel 75 mg daily
    D. Restart aspirin 325 mg every other day

- **Clopidogrel Drug class is ---Thienopyridine, antiplatelet.**
- Clopidogrel is used to prevent heart attack and stroke in people who are at high risk of these events, including those with a history of myocardial infarction and other forms of acute coronary syndrome, stroke, and those with peripheral artery

disease.

- Pooled relative risk estimates for major composite cardiovascular and cerebrovascular events, recurrence of ischemic stroke, or any ischemic or hemorrhagic stroke were all significantly lower for clopidogrel monotherapy compared to aspirin. Risk of bleeding events were also significantly lower with **clopidogrel** therapy.

50. Which of the following would be the most preferred **antimicrobial** agents in the treatment of aspiration **pneumonia** in a hospitalized **adult** patient?

A. Ceftriaxone and metronidazole
B. Gentamicin and cloxacillin
C. Ceftriaxone and cloxacillin
D. Gentamicin and erythromycin

- **Aspirationpneumonia**is caused by inhaling foreign materials into your lungs. These materials can be:
- Bacteria from saliva and secretions from your mouth and nose.
- Stomach contents such as digestive juices or vomit.
- Food or beverages.
- Small foreign objects.
- Parenteral First Line **Ceftriaxone** 1 g IV every 24 hours AND

Metronidazole 500 mg IV every 6 hours (or 1 g IV every 12 hours) **OR**---Ampicillin-Sulbactam 3 g IV every 6 hours

- Oral Antibiotics First-Line
- **Clindamycin 300-450 mg orally three times daily**
- **Moxifloxacin** 400 mg once daily

51. EM is a 56-year-old, 60 kg Ethiopian male CKD patient with the following laboratory values: **BUN** 56 mg/dL and; **SCr** 2.8 mg/dL. What stage of(140-age)*weightCKD would you classify him? GFR =72*serum creatinine

A. Stage 2 CKD
B. Stage 4 CKD
C. Stage 3 CKD
D. Stage 5 CKD

Chronic Kidney Disease

52

Classification of Chronic Kidney Disease

Stage	Description	GFR (mL/min/1.73 m^2)
0	With risk factors for CKD	>90
1	Kidney damage with normal or ↑ GFR	≥90*
2	Kidney damage with mild ↓ GFR	60-89
3	Moderate ↓ GFR	30-59
4	Severe ↓ GFR	15-29
5	Kidney failure (ESRD)	<15

52. JF is a 60-year old female patient diagnosed with **hypertension**. Her average **BP** is 145/90. She has no other comorbid conditions. In addition to changes in Diet& exercise,

what pharmacotherapy would be most appropriate for JF?

A. Clonidine
B. Hydrochlorothiazide
C. Furosemide
D. Life style modification

Clinical Condition	**Office Blood Pressure Measurement**			
	< 140/90	140-159/90-99	160-179/100-109	≥180/110
If there is no evidence of end-organ damages	Re-measure after 1year	Confirm in one Month	Confirm as soon as possible within one week	Diagnose HTN and refer to specialist
If there is evidence of end-organ damages	Confirm HTN and refer to specialist			
Hypertensive Crises (BP> 180/110 mmHg) with or without target organ damage				

- **Treatment targets** when SBP<140 mmHg and DBP<90 mmHg.
- Initial monotherapy in uncomplicated hypertension: **calcium channel blocker such as amlodipine** as first line drug for the

treatment of **uncomplicated** essential hypertension in our country at General Hospital.

- Thiazide diuretics such as **hydrochlorothiazide** to be used as add on when target BP not achieved on long-acting dihydropyridine calcium channel blocker such as amlodipine.
- It is less expensive than other hypertension medications in our setting.
- **Notes on specific hypertension medications--** Pregnant women and women of childbearing age **not** on effective contraception should not be given **ACE** inhibitors, **ARBs**, or **thiazide**/**thiazide**-like diuretics; **CCBs**should be used.

53. Which of the following are critical in obtaining accurate BP measurements?

A. Avoidance of caffeine or nicotine 30 minutes prior to measurement
B. Patient should be seated comfortably for at least 5 minutes, with backsupported, and feet flat on the floor.
C. Arm must be supported at position heart level
D. All of the above

54. The preferred treatment option for a 45-year-old male presenting with a 3-month history of severe, continuous **GERD** symptoms is:

A. Patient-directed therapy with OTC omeprazole
B. Life style modification
C. Prescription strength proton pump inhibitor
D. Anti-reflex surgery

- Proton-pump inhibitors **(PPIs)** are a class of medications used for peptic ulcers, gastroesophageal reflux disease **(GERD)**, and H. pylori infection.
- Common agents in this class include omeprazole, pantoprazole, rabeprazole, lansoprazole, esomeprazole, and dexlansoprazole. There is no clear evidence that one agent works better than another.

55. Which of the following is considered as an allergic reaction?

A. Upset stomach with ibuprofen
B. Sleepiness with diphenhydramine.
C. Rash due to penicillin
D. Pedal edema due to nifedipine

■

56. While counseling a patient on **ART** the following points should be addressed except:

A. All possible major side effects of individual drugs
B. The potential for resistance development
C. Early treatment initiation will limit future treatment options
D. Potential barriers and appropriate strategies of adherence to ART.

■

57. What is the appropriate **minimum** duration that an individual must take ART medications before it can consider a possible regimen failure?

A. 3 months
B. 12 months
C. 6 months

D.9 month

58. A 74-year-old female who weighs 55 kg presents with a **Deep vein thrombosis** (DVT) and is initiated on **enoxaparin** therapy. Which of the following is an acceptable **warfarin** initiation dose in this patient?

A. 1 mg
B. 7.5 mg
C. 5 mg
D. 10 mg

- Deep vein thrombosis (DVT) is the formation of a blood clot in a deep vein, most commonly in the legs or pelvis.
- Symptoms can include pain, swelling, redness, and enlarged veins in the affected area, but some DVTs have no symptoms.

59. C.F. is a 55-year-old man who presents to clinic with significant **dyspnea** on **exertion** and **orthopnea**. He has an ejection fraction of 55% and a past medical history significant for **type 2 diabetes**, **heart failure**, and

hypertension. He has no known drug allergies and is receiving **furosemide**, **metoprolol**, and **glibenclamide**. What pharmacologic agent should beadded to C.F.'s regimen reduce morality associated with his **heart failure?**

A. Lisinopril
B. Nifedipine
C. Digoxin
D. Spironolactone

- **Lisinopril** is in a class of medications called angiotensin-converting enzyme (ACE) inhibitors.
- **Lisinopril** (when added to **diuretics** and/or **digoxin**) provides symptomatic **benefits** in patients with **congestive** heart **failure**.
- The ATLAS study demonstrated that **high**doses of **Lisinopril** significantly reduced the risk of the combined end-point of morbidity and mortality compared with low doses of the drug.

60. BG is a 74-year-old woman admitted to medical ward due to **heart failure** exacerbation. She is classified as **NYHA class IV**. Her blood pressure is**144/82** mm Hg and most recent EF is **26%.** Her current medication regimen includes **enalapril**10 mg **once** daily, **carvedilol**25 mg **twice** daily, **digoxin**0.125

mg **once** daily, and **furosemide**20 mg **twice** daily. Which of the following would be the best choice to add at this time?

A. Hydrochlorothiazide
B. Nifidipine
C. Losartan
D.Spironolactone

NYHA Class	Physical Activity	2-Year Mortality (%) on ACE-I
I	Asymptomatic (no limitation of physical activity; there is no shortness of breath, fatigue, or palpitations with ordinary physical activity)	10
II	Slight limitation (shortness of breath, fatigue, or palpitations with ordinary physical activity)	20
III	Marked limitation (shortness of breath, fatigue, or palpitations with activities of daily living)	30—40
IV	Symptoms at rest (shortness of breath, fatigue, or palpitations at rest)	40—50

ACE-I, angiotensin-converting enzyme inhibitors; NYHA, New York Heart Association.

- **Spironolactone** is a potassium-sparing diuretic that is primarily used to treat heart failure.
- **Spironolactone** is used in **combination** with other medicines **to treat high blood pressure (hypertension) and heart failure**.
- Lowering blood pressure can reduce the risk of strokes and heart attacks. Spironolactone is also used to lessen the need for hospitalization for heart failure
- **Ejection Fraction** (EF) is a measurement doctors use to calculate the percentage of blood that leaves your heart each time it contracts.
- **Normal EF** is in the range of 55% to 70%.
- As the percentage falls, it tells the doctor that the heart failure is getting worse. In general, if the EF falls below 30%, it's relatively severe.
- A reading of 20% or below is very severe heart failure.

61. RT, a 55 years old male patient, is ready to be discharged after experiencing an **acute ischemic stroke** 5 days ago. His past medical history is significant for **Hypertension**. Which one of the following is the appropriate **combination** of medications for **RT** upon discharge?

A. ASA only
B. ASA, enalapril and atorvastatin

C. ASA, atorvastatin
D. Atorvastatin, enalapril

- **ASA** is short for acetylsalicylic acid, which is sold under names including Aspirin, Entrophen and Novasen.

62. A 62-year-old man presents with substernal chest discomfort that usually lasts for 2 to 10 **minutes** that is pressure-like and radiates up to his jawanddown the **left arm** and is brought on by walking four blocks or by Arguments with his wife over money. Past medical history includes **dyslipidemia**; total cholesterol, 320 mg/dL; **LDL**, 252 mg/dL; **triglyceride**TG, **180** mg/dL; and **HDL**, 32 mg/dL, smoking two packs per day for 30 Years, benign prostatic hypertrophy, and hypertension BP, **156/92 mm Hg**. Resting electrocardiogram (**ECG**) is normal. His current medications listincludes: **Sublingual** nitroglycerine, terazosin, aspirin, and atorvastatin.

What type of **DTP** this patient experienced?

A. Un-necessary drug therapy
B. Needs additional drug therapy

C. Dosage too low

D. There is no DTP

- **Needs additional drug therapy** is a DTP that occurs when there is a medical condition needing new drug therapy, or preventive therapy is needed to reduce the risk of developing a new condition, or a medical condition requires combination therapy for better efficacy
- **Nitroglycerin**, also known as glyceryl triturate (GTN), is a medication used for heart failure, high blood pressure, anal fissures, painful periods, and to treat and prevent chest pain caused by decreased blood flow to the heart (angina) or due to use of cocaine. This includes chest pain from a heart attack.
- **Terazosin**, sold under the brand name Hytrin among others, is a medication used to treat symptoms of an enlarged prostate and high blood pressure. For high blood pressure, it is a less preferred option.
- **Atorvastatin**, sold under the brand name Lipitor among others, is a statin medication used to prevent cardiovascular disease in those at high risk and treat abnormal lipid levels. For the prevention of cardiovascular disease, statins are a first-line treatment,

63. A patient with a **gunshot** wound to the abdomen, which has resulted in **spillage** of intestinal contents, is brought to the emergency room.

Which **antibiotic** would you select to effectively treat an infection due to **Bacteroidesfragilis**?

A. Amoxicillin
B. Gentamicin
C. Metronidazole
D. Azithromycin

- **Bacteroidesfragilis**is an anaerobic, **Gram-negative**, pleomorphic to rod-shaped bacterium. It is part of the normal microbiota of the human **colon** and is generally commensal, but can cause infection if displaced into the bloodstream or surrounding tissue following surgery, disease, or trauma.
- **Cefoxitin**, **moxifloxacin**, and **clindamycin** have **lowlevels**of **susceptibility** for Bacteroides **fragilis**.
- **Whereas** Piperacillin/tazobactam, meropenem, and **metronidazole**have high **susceptibility**rates. [23] **Metronidazole** is the antibiotic of **choice** for the management of infections caused by **anaerobes.**

64. For a patient who is currently stable after a severe **upper GI** bleed associated with long term **NSAID** use, and found to be **H**. **pylori** positive.

What is the most effective management strategy for this patient?

A. **Stop NSAIDS, eradicate H. pylori with antibiotics and H_2-blocker full dose or daily PPI maintenance therapy.**
B. Stop NSAIDs, full dose H_2-blocker or daily PPI maintenance therapy
C. Eradicate H. pylori with antibiotics, full dose H_2RA or daily PPI maintenance therapy
D. Continue high-dose proton pump inhibitor therapy.

- **H.Pylori positive** can damage the protective lining of the stomach and small intestine. This can allow stomach acid to create an open sore (ulcer). About 10% of people with H. pylori will develop an ulcer. Inflammation of the stomach lining.
- **H.pylori** infections are usually treated with **at least two** different **antibiotics** at once.
- Treatment may also include medications to help your stomach heal, including:
- Proton pump inhibitors **(PPIs).**These drugs stop acid from being produced in the stomach.
- Bismuth subsalicylate.
- Histamine (H-2) blockers.

65. Among which type of **TB** patients the use of **steroids** for **11weeks** has shown to be beneficial and should be considered as the treatment regimen?

A. Pulmonary TB
B. TB pleurisy
C. TB lymphadenitis
D. TB meningitis

- **Corticosteroids** are commonly used in addition to anti tuberculous drugs for treating people with the condition.
- These drugs help reduce inflammation of the surface of the brain and associated blood vessels, and are thought to decrease pressure inside the brain, and thus reduce the risk of death.

66. Which one of the following drugs should **be avoided** in the management of **acute decompensated heart failure?**

A. Loop diuretics
B. B-blockers
C. Digoxin
D. BI-agonists

- Acute decompensated heart failure **(ADHF)** is a clinical syndrome of new or worsening signs and symptoms of HF that often lead to hospitalization or an emergency department visit.
- **Beta-blockers** have generally been avoided in patients with ADHF.
- Concern due to the negative inotropic effects and **hemo dynamic compromise** leads physicians to stop beta-blockers even though evidence is lacking.
- Furthermore, in clinical trials of beta-blockers for AMI, patients with significant heart failure have been excluded.

67. A 25 years female patent was admitted with the assessment of stage **III** CHF (LVEF=60%) precipitated by **atrial fibrillation** otherwise there is no any other Comorbidity. Which of the drug is less beneficial for the patient at this time?

A. Loop diuretic
B. Warfarin
C. Digoxin
D. Hydrochlorothiazide

- Chronic heart failure (CHF) (also called congestive heart failure, cardiac and heart failure) is a disorder in which the heart loses its ability to pump blood efficiently throughout the body.
- **Diuretics** are important as they relieve symptoms quickly and control fluid retention.
- Diuretics are considered currently to be the **first-line** treatment for patients with chronic heart failure.
- **Furosemide**is given to help treat fluid retention (edema) and swelling that is caused by congestive heart failure, liver disease, kidney disease, or other medical conditions. It works by acting on the kidneys to increase the flow of urine.
- **Hydrochlorothiazide**Use is Independently Associated with a Decreased Risk of New Atrial Fibrillation in Hypertensive Patients with Electrocardiographic Left Ventricular Hypertrophy.

Heart Failure
CLASSIFICATIONS
1
Cardiac disease, but no symptoms and no limitation in ordinary physical activity.
2
Mild symptoms and slight limitation during ordinary activity.
3
Significant limitation in activity due to symptoms. Comfortable only at rest.
4
Severe limitations. Symptoms even while at rest.

68. JK was taking **vancomycin** lg IV **BID**, **ceftriaxone** lg IV BID, **enalapril** 10mg PO daily, **spironolactone** 25 mg PO daily, and **furosemide** 60 mg IV TID. The **renal**function test revealed that **Scr**= 3 mg/dL and **BUN** = 65 mg/dL. Otherwise, **CBC**, **electrolyte** and **Liver** function tests are **normal**.

Which one of the following **two** drugs can be continued without dose reduction or discontinuation at this time?

A. Vancomycin and ceftriaxone
B. Furosemide and enalapril
C. Ceftriaxone and furosemide
D. Enalapril and spironolactone

- the typical range for **serum creatinine** is: For adult men, 0.74 to 1.35 mg/dL (65.4 to 119.3 micromoles/L) For adult women, 0.59 to 1.04 mg/dL (52.2 to 91.9 micromoles/L)
- Results of the **BUN** test are measured in milligrams per deciliter (mg/dL) in the United States and in millimoles per liter (mmol/L) internationally.
- In general, around **6 to 24**mg/dL (2.1 to 8.5 mmol/L) is considered normal.
- If your **BUN**is more than **20** mg/dL, your kidneys may not be working at full strength. Other possible causes of an elevated BUN include dehydration and heart failure.
- A **sCr** level of greater than **1.2** for **women** and greater than **1.4** for **men** may be an early sign that the kidneys are not working well.
- **If high creatinine** levels are caused due to kidney **infection**, then it can be treated **with antibiotics**.
- If high **creatinine** levels are caused by high blood pressure, then **antihypertensive** drugs should be prescribed to treat the cause.
- Proper **hydration** is the most effective way to lower BUN

levels. A low-protein diet can also help lower BUN levels. A medication wouldn't be recommended to lower BUN levels. However, abnormal BUN levels don't necessarily mean you have a kidney condition.

69. Which of the following **opportunistic** infections appears at the **lowest** CD4 count among patients infected with HIV?

A. TB
B. Toxoplasmosis
C. PCP
D. Cytomegalovirus.

- Toxoplasma **gondii**is an obligate intracellular protozoan parasite presenting as a zoonotic infection distributed worldwide. **In HIV-positive** individuals, it causes severe **opportunistic** infections, which is of major public health concern as it results in physical and psychological disabilities.
- **What does toxoplasmosis do to humans?**
- Untreated, these infections can lead to blindness. But if your immune system is weakened, especially as a result of HIV / AIDS, toxoplasmosis can lead to seizures and life-threatening illnesses such as encephalitis — a serious brain infection. In people with AIDS, untreated encephalitis from toxoplasmosis is

fatal.

70. A 52-year-old woman received a diagnosis today of **type 2** DM. Her **AlCis**7.8%, and her **FBG** is 186 mg/dL. She has no other chronic disease states or history of cardiovascular disease. According to the current ADA guidelines, which would be considered the best initial treatment of choice for this patient?

A. Implement changes in lifestyle (diet and exercise)
B. Implement changes in lifestyle plus metformin 500 mg once daily
C. Implement changes in lifestyle plus sitagliptin 100 mg once daily
D. implement changes in lifestyle plus insulin glargine 10 units once daily

- **Type** 1 diabetes- results from cell destruction (immune mediated or idiopathic), leading to absolute insulin deficiency.
- **Type** 2 diabetes-results from a progressive insulin secretory defect on the background of insulin resistance.
- Gestational diabetes mellitus (GDM)-diabetes diagnosed during pregnancy in previously non-diabetic woman.

Table 5.1.2. Current diagnostic criteria for diabetes mellitus

Diagnostic test	Pre-diabetes	Diabetes	Remarks
Fasting blood glucose	100-125mg/dl	≥126 mg/dl	At least 2 tests needed*
Hemoglobin A1C#	5.7-6.4%	≥ 6.5%	At least 2 tests needed*
02-hour plasma glucose	140-199mg/dl	≥200mg/dl	At least 2 tests needed
Random blood glucose		≥200mg/dl	Only classic symptoms of hyperglycemia or hyperglycemic crisis

**If both fasting blood sugar and hemoglobin A1C are done initially and both are in the diabetic range, repeat test is not necessary for the diagnosis.*

 # If there is significant discrepancy between HbA1C and blood glucose measurements, use the blood glucose level.

71. The only **calcium channel blocker** with approved application in the **prophylaxis** of **neurologic** injury following rupture of an intracranial aneurysm (subarachnoid hemorrhage):

A. Amlodipine
B. Nifedipine
C. Nimodipine
D. Verapamil

- **Nimodipine - Drug class**Calcium channel blocker (dihydropyridine)

- Calcium channel blocker (**Nimodipine**) for vasospasm lowers the incidence of cerebral infarction by one-third.
- Used as Prophylactic anticonvulsant.
- **Nimodipine** is used to treat symptoms resulting from a ruptured blood vessel in the brain (subarachnoid hemorrhage). It works by increasing the blood flow to injured brain tissue.

72. A mainstay of therapy for virtually all forms of shock is:

A. Intravenous fluids
B. Phenylephrine
C. Epinephrine
D. Red blood cells

- Isotonic crystalloid solutions are typically given for intravascular repletion during shock and hypovolemia.

73. HD is a 48-year old man (70kg) admitted after **acute myocardial infarction**. He became an uric within 24 hrs with the following information.PMH: DM, HTN, Tobacco use MEDS: **metformin**, **amlodipine**, **nicotine patch**, **naproxen**.Labs: **Scr** 1.0 on admission, increase to 2.1 in 24 hrs (BUN 20 mg/dl).Urine muddy casts.

Vitals: BP 120/80 which of the following medications is best to **discontinue at this time**?

A. Amlodipine only
B. Metformin and amlodipine
C. Naproxen only
D. Metformin and naproxen

- Amlodipine as first line drug for the treatment **uncomplicated** essential **hypertension** in our country at General Hospital level.
- **Naproxen**, sold under the brand name Aleve among others, is a non steroidal anti-inflammatory drug (NSAID) used to treat pain, menstrual cramps, inflammatory diseases such as rheumatoid arthritis, and fever.
- It is taken by mouth. It is available in immediate and delayed release formulations. Onset of effects is within an hour and last for up to twelve hours.

74. Of the following statements one is wrong about stroke?

A. Alterations in serum glucose are common
B. Intravenous labetalol is generally the drug of choice
C. Rapid reduction of BP to <140/90 is recommended

D. Fever is associated with unfavorable outcomes

75. The basic principles of **emergency** management of severe **asthma** exacerbations in adults include all except.

A. Assess the severity of the attack
B. Use inhaled short-acting beta agonists early and frequently
C. Start systemic glucocorticoids if there is no an immediate and markedresponse to the inhaled short-acting beta agonists
D. **Oral glucocorticoids are the initial treatment regimen**.

- **Beta2-agonists** (bronchodilators) are a group of drugs prescribed to treat asthma. Short-acting beta-agonists (SABAs) provide quick relief of asthma symptoms.
- **Glucocorticoids** such as **prednisone** and **fluticasone**, are commonly used for their potent ability to modulate the inflammation that leads to acute exacerbations of asthma

symptoms.

76. Identify the wrong statement about **neonatal** sepsis

A. Sepsis is an important cause of morbidity and mortality among newborn infant
B. The combination of **ampicillin** and **gentamicin** is preferred empiric therapy
C. The primary intervention to prevent neonatal sepsis is the use of **intra partum antibiotic prophylaxis** (IAP) in mothers with documented group B streptococcal (GBS) colonization.
D. The maximum duration of treatment is 5 days

- Neonatal sepsis is a clinical syndrome characterized by signs and symptoms of infection with or without accompanying bacteremia in the first month of life.

77. WT is a 58-year-old patient diagnosed with **community-acquired pneumonia** and **sepsis**. WT has received initial fluid resuscitation (10 minutes ago) and has ordered for **ceftriaxone** and **azithromycin**.

What should be ordered and completed prior to initiation of antibiotics (if possible)?

A. Initiate stress ulcer prophylaxis
B. Draw blood for culture and sensitivity test
C. Initiate hydrocortisone
D. Initiate vasopressin

- **Vasopressin** is known to regulate blood pressure, blood osmolality, and blood volume.

78. Select the monitoring parameter for patients receiving fluid resuscitation.

A. Glucose
B. Serum cortisol level
C. Complete blood count with differential
D. Urine output

- **Fluid resuscitation**, regardless of solution type or estimated need, should be titrated to maintain a urine output of approximately 0.5–1.0 ml/kg/hour in adults and 1.0–1.5 ml/kg/hour in children.

79. Which of the following is **correct** about diabetic ketoacidosis (DKA) management?

A. Insulin therapy should be started first followed by fluid replacement
B. Fluid replacement therapy should be initiated before insulin therapy
C. Empiric antibiotic therapy should be initiated immediately
D. NPH is recommended for DKA patients as initial therapy

- Diabetic ketoacidosis (DKA) is an acute, major, life-threatening complication of diabetes characterized by hyperglycemia ketoacidosis, and keton uria.
- It occurs when absolute or relative insulin deficiency inhibits the ability of glucose to enter cells for utilization as metabolic fuel, the result being that the liver rapidly breaks down fat into ketones to employ as a fuel source.

- The initial priority in the treatment of diabetic ketoacidosis is the restoration of extra-cellular fluid volume through the intravenous administration of a normal saline (0.9 percent sodium chloride) solution.

- **NPH insulin**, also known as isophane insulin, is an inter mediate-acting insulin given to help control blood sugar levels in people with diabetes.
- It is used by injection under the skin once to twice a day. Onset of effects is typically in 90 minutes and they last for 24 hours.
- Versions are available that come premixed with a short-acting insulin, such as regular insulin.

80. Which one of the following emergency drugs does not have **ceiling** dose (maximum dose)?

A. Furosemide
B. Adrenaline
C. Regular insulin
D. Salbutamol

81. Which of the following **situation** does not alter patient's insulin requirements among diabetic patients?

A. Pregnancy

B. Major surgery
C. Use of proton pump inhibitor
D. Presence of Sevier infection

- While the study suggests that PPIs are safe in patients with diabetes, the experts do not recommend individuals with diabetes begin taking them improve their blood sugar levels.

82. In general risk of drug **induced** birth defect is higher during

A. First trimester
B. Third trimester
C. Second trimester
D. The same in all stages

- First Trimester (0 to 13 Weeks)
- The first trimester is the most crucial to your baby's development. During this period, your baby's body structure and organ systems develop. Most miscarriages and birth defects occur during this period.

83. Which one of the following during is **not contra indicated** during pregnancy?

A. Methotrexate
B. Lithium
C. Folic acid
D. Cyclophosphamide

- When the baby is developing early during pregnancy, **folic acid** helps form the neural tube. Folic acid is very important because it can help prevent some major birth defects of the baby's brain (anencephaly) and spine (spina bifida).
- The neural tube forms the early brain and spine.

84. which one of drugs/substances should be avoided during **lactation** because of high concentration in breast milk

A. Insulin
B. Heparin
C. Warfarin
D. Alcohol

- **Alcohol** is a small and very water-soluble molecule, so it passes freely into human milk. Therefore, levels of alcohol in milk closely parallel maternal blood alcohol concentrations.
- Even small amounts of alcohol in human milk have been shown to disrupt and shorten total duration of infant sleep.

85. All of the following can be considered in the management of **hepatic encephalitis** except:

A. Metronidazole
B. Ceftriaxone
C. Neomycin
D. Lactulose

- In general, the oral antibiotics neomycin, paromomycin, vancomycin, and metronidazole have been effectively used, with or without **lactulose**, to reduce ammonia-producing enteric bacteria in patients with **hepaticencephalopathy.**

86. All of the following are recommended in the treatment of **constipation** except:

A. Dietary modification (increases meal with high fiber content)
B. Change in other aspects of lifestyles regular physical exercise
C. Decrease fluid intake
D. Pharmacologic therapy like bisacodyl

- **Bisacodyl** is a medication use for constipation and to clear the bowels before colonoscopy.
- It may be taken by mouth or used rectally. Generally by mouth effects occur in 6 to 12 hours while rectally effects are within an hour. Long term use appears to be safe,

87. Which of the following is the **safest laxative** and used for treatment of **constipation**, particularly in children?

A. Glycerin
B. Lactulose
C. Bisacodyl
D. Castor oil

- **Glycerin** suppositories should not be used frequently, because infants may become behaviorally conditioned to depend upon rectal stimulation to initiate stooling.
- In addition, glycerin may irritate the anus or rectal mucosa, causing symptoms to become chronic.

88. Which of the following drugs have **short half**-life and used only in **mild** type of GERD?

A. Anti-acids

B. H_2 blockers
C. Proton pimp inhibitors
D. All of the above

- Antacids are available over the counter and are taken by mouth to quickly relieve occasional heartburn, the major symptom of gastro esophageal reflux disease and indigestion.
- Treatment with antacids alone is symptomatic and only justified for minor symptoms.

89. TM is a 60-year-old woman with a **CrCl** of 25 mL/min. She is beginning tonotice **some ankle swelling**, and her physician diagnoses **edema** secondary to chronic renal **insufficiency**. The most appropriate therapy fo rthis patient at this time would be

A. Dialysis
B. Thiazide diuretics
C. Loop diuretics
D. Potassium sparing diuretics

- Normal Result **CrCl**
- Male: 97 to 137 mL/min (1.65 to 2.33 mL/s).
- Female: 88 to 128 mL/min (14.96 to 2.18 mL/s).

- **Loop diuretics** are commonly prescribed to manage edema symptoms such as swollen **legs** or breathlessness and to relieve fluid overload.

90. Which one of the following **diuretics** is the most effective and safe in patient with **acute renal** diseases?

A. Loop diuretics
B. Potassium sparing diuretics
C. Thiazide diuretics
D. All are equally effective

- **Loop Diuretics** (furosemide, bumetanide, torsemide, and ethacrynic acid)currently have no role in preventing AKI progression or reducing mortality,
- But they can prevent complications, such as **pulmonaryedema**.
- **Thiazide diuretics**, when used as single agents, are generally not effective for fluid removal when **creatinineclearance** is less than 30 mL/minute.

91. Which of the following **cannot** be treatment option in **hyperkalaemia**?

A. Calcium gluconate

B. Metoprolol

C. Insulin/glucose

D. Albuterol

- **Calcium gluconate**is a mineral supplement and medication. As a medication it is used by injection into a vein to treat low blood calcium, high blood potassium, and magnesium toxicity.
- **Salbutamol**, also known as **Albuterol** and marketed as Ventolin among other brand names is a medication that opens up the medium and large airways in the lungs. It is used to treat asthma, including asthma attacks, It may also be used to treat high blood potassium levels.

92. A 45 years old man diagnosed with **chronic kidney disease** and **type II diabetes** mellitus. Which of the following medication is **less effective** for this patient?

A. Enalapril

B. Atenolol

C. Lisinopril

D. Candesartan

- **Enalapril** is a medication used to treat high blood pressure, diabetic kidney disease.
- Candesartan is a medication used to treat high blood

pressure, heart failure, and **diabetic kidney disease**. In high blood pressure, it is one of a number of possible first line agents.

- **Candesartan** It is also used to prevent **kidney** problems in people with **diabetes.**

93. Which one of the following **antifungal** medication has the highest risk of drug induced **renal** toxicity?

A. Ketoconazole
B. Fluconazole
C. Amphotericin
D. Iitraconazole

- **Amphotericin-**B binds to sterols in cell membranes, thereby creating pores that compromise membrane integrity and increase membrane permeability.
- It binds not only to ergo sterol in fungal cell walls but also to cholesterol in human cell membranes; this is what accounts for its **nephrotoxicity.**

94. Which of the following is not healthy lifestyle**?**

A. Avoid smoking
B. Moderate to vigorous activity >30 min/day.

C. Body mass index>30 kg/m.

D. Healthy diet score.

-

95. Which of the following is the **anti hypertensive choice** of medication for **pregnant** mother?

A. Enalapril

B. Methyldopa

C. Lisinapril

D. Candesartan

- Use of **methyldopa** in pregnancy is common and is unlikely to cause any harm. Most pregnant women taking methyldopa will start treatment after the **first trimester** when the baby is fully developed.
- This will therefore not cause structural birth defects in the baby.

96. Which groups of **antihypertensive** medications are generally considered as **second line** and used for patients having **benign prostate hyperplasia** (PBH)?

A. B-blockers

B. a_1-blockers

C. ACEIS

D. Diuretics

- Selective **alpha-1blocker** ends with the suffix "-**osin**." These medications include alfuzosin, doxazosin, terazosin, tamsulosin, and prazosin.
- These medications are FDA approved to treat benign prostatic hyperplasia (**BPH**).

97. Which one of the following medication **don't** have **mortality** benefit but used as **symptomatic** treatment and **decrease** hospitalization among **heartfailure** patients?

A. ACEIS

B. Potassium sparing diuretics

C. Digoxin

D. a_1-blockers

- **Digoxin** is **no longer the first** choice for heart failure; it has fallen out of favor in people with heart failure because it may increase the risk of death.
- Currently, the recommendation for heart failure is a triple therapy of **ACE** inhibitor, **beta** blocker and **mineralocorticoid**

antagonists. Digoxin is a third-line therapy.

98. Which of the following is the long-term goals following **myocardial infarction**?

A. Prevent the development of systolic heart failure
B. Prevent recurrent MI and stroke
C. Prevent death, including sudden cardiac death
D. **All are correct**.

- A myocardial infarction (MI), also known as a heart attack, occurs when blood flow decreases or stops to a part of the heart, causing damage to the heart muscle.

99. Which of the following medications are generally contraindicated or should be used with **cautions** for **asthmatic** patients?

A. Enalapril
B. Amlodipine
C. Digoxin
D. Propranolol

- **Propranolol** may be contraindicated in people with:
- asthma or chronic obstructive pulmonary disease (COPD)
- Slow heart rate (bradycardia) (<60 beats/minute)
- Sick sinus syndrome
- Atrioventricular block (second- or third-degree)
- Shock

100. A 40 years old male patient was on **warfarin** therapy for **DVT** prophylaxis after **left knee amputation**. The patient took very high dose of warfarin mistakenly starts to have **bruise** in his **hands** indicating risk of **bleeding**.

Which one of the following should be used as anti-dot for this patient?

A. Protamine sulphate
B. Aspirin
C. Heparin
D. Vitamin K

- **Managing Warfarin therapy.**
- Warfarin is an anticoagulant drug. It functions by inhibiting an enzyme that is responsible for recycling vitamin K to a functional state.

- As a consequence, proteins that should be modified by vitamin K are not, including proteins essential to blood clotting, and are thus not functional.
- The purpose of the drug is to reduce risk of inappropriate blood clotting, which can have serious, potentially fatal consequences.
- The proper anticoagulant action of warfarin is a function of vitamin K intake and drug dose.
- Due to differing absorption of the drug and amounts of vitamin K in the diet, dosing must be monitored and individualized for each patient.
- Some foods are so high in vitamin K1 that medical advice is to avoid those (examples: collard greens, spinach, turnip greens) entirely, and for foods with a modestly high vitamin content, keep consumption as consistent as possible, so that the combination of vitamin intake and warfarin keep the anti-clotting activity in the therapeutic range.
- Vitamin K is a treatment for bleeding events caused by overdose of the drug.
- The vitamin can be administered by mouth, intravenously or subcutaneously.
- Oral vitamin K is used in situations when a person's International normalized ratio is greater than 10 but there is no active bleeding.
- The newer anticoagulants apixaban, dabigatran and rivaroxaban are not vitamin K antagonists.

101. A 52-year-old man has a past history of **chronic stable angina** & hypertension. He is experiencing **chest pain** twice weekly while being treated with **atenolol** 100 mg daily. His BP is 146/90 mm Hg (144/92 mmHg when repeated), & his HR is 58 beats/minute.

Which of the following is the most appropriate agent to be **added** in this patient?

A. Nifedipine SR 30 mg daily.
B. Enalapril 20 mg daily.
C. HCT 12.5 mg daily.
D. Losartan 150 mg daily.

- **Stable angina** Also known as 'effort angina', this refers to the classic type of angina related to myocardial ischemia.
- **Nifedipine sustained release** is a calcium channel blocker.
- It relaxes your blood vessels and decreases the amount of work the heart has to do.
- It treats high blood pressure and/or prevents chest pain (also called angina)

102. Which adverse effects of **Lisinopril** can be avoided by switching to **candesartan**?

A. Cough

B. Hypotension

C. Hyperkalemia

D. Renal failure

- **Lisinopril Drugclass (ACE inhibitor) Side effects**Headache, dizziness, feeling tired, **cough**, and nausea, rash.
- **Candesartan Drug class (ARB)**
- In **hypertensive** patients with **ACE-inhibitor–induced cough**, the incidence, frequency, and severity of **dry cough** was significantly **lower with candesartan** cilexetil than with **enalapril**.

103. Which of the following therapies are shown to reduce risk of **stroke** following **MI**?

A. Warfarin

B. Aspirin

C. Simvastatin

D. All of the above

-

104. Which one of the following **antipsychotic** medications is associated with high risk of **extra pyramidal** side effects?

A. Clozapine
B. Haloperidol
C. Olanzapine
D. Quetiapine

- **Extra pyramidal symptoms**(EPS) are symptoms that are archetypically associated with the extrapyramidal system of the **brain's cerebral cortex**.
- **Haloperidol** Drug class typical **antipsychotic**.
- **Haloperidol is** a dopamine receptor antagonist used to treat patients with psychotic disorders. **Especially** at high doses, haloperidol carries a higher risk of **extra pyramidal** symptoms (EPS) compared to second-generation antipsychotics.

105. All of the following side effects of **most antipsychotic** and **anti-depressant** medications are reasons for **poor** adherence among the patients except:

A. Weight loss
B. Sedation

C. weight gain
D. Sexual dysfunction

106. Which of the following drug **adverse** effects including severe **peripheral ischemia** manifested as **cold**, numbness, **painful** extremities, diminished peripheral pulses and **claudication**?

A. B-blockers
B. CCBs
C. Ergot alkaloids
D. Antidepressants

- **Ergot alkaloids** there are a variety of clinically useful ergo line derivatives for the purpose of vasoconstriction, the treatment of **migraines**, and treatment of **Parkinson's disease.**
- **Ergot is UNSAFE.** There is a high risk of poisoning, and it can be fatal. Early symptoms of poisoning include nausea, vomiting, muscle pain and weakness, **numbness**, itching, and rapid or slow heartbeat. Ergot poisoning can progress to gangrene, vision problems, confusion, spasms, convulsions, unconsciousness, and death**.**

107. Musculoskeletal (bone related) pain can be best treated with which of the following medications?

A. NSAIDs
B. Anticonvulsants
C. Opioid analgesic
D. Antidepressants

- **NSAIDs**It has been hypothesized that NSAIDs may delay healing from **bone** and **soft-tissue** injuries by inhibiting inflammation. On the other hand, it has also been hypothesized that NSAIDs might speed recovery from soft tissue injuries by preventing inflammatory processes from damaging adjacent, non-injured muscles.

108. Which of the following drug is **potent** CYP enzyme inducer including its own metabolism (**auto inducer**), hence it requires dose optimization after2 weeks?

A. Phenytoin
B. Valproic acid
C. Carbamazepine
D. Venlafaxine

- **Carbamazepine** (CBZ), sold under the trade name Tegretol among others, **is an anticonvulsant** medication used primarily in the treatment of epilepsy and neuropathic pain. It is used in schizophrenia along with other medications and as a **second-line** agent in bipolar disorder.
- Carbamazepine is a potent inducer of CYP3A4 and other oxidative enzyme system in the liver, and it may also increase glucuronyltransferase activity.

109. Which drug is effective to **blunt** the **peripheral** autonomic symptoms of arousal (rapid HR, sweating and tremor) in performance-related anxiety?

A. Non selective B-Blockers
B. SSRIS
C. TCAS
D. Anticonvulsants

- Nonselective beta blockers display both β1 and β2 antagonism. includig
- Propranolol
- Carvedilol (has additional α1-blocking activity)
- Labetalol (has additional α1-blocking activity)
- Timolol

- **Anxiety** (plural **anxieties**) a feeling of being anxious. Psychiatry a nervous disorder marked by excessive uneasiness.
- Non selective beta-blockers are **not recommended** in **peripheral** vascular disease because these drugs have been reported to **worsen** the symptoms of intermittent claudication.

110. A 32 years old male **client** comes to your pharmacy complaining **insomnia**. Which is not recommended to manage the patient's problem?

A. Often have a day time naps
B. Go to bed only when you feel sleepy
C. Relaxation exercise like yoga
D. Create comfortable sleep environment

111. Which of the following drug is **not** recommended in the management of **manic** phase of **bipolar disorder**?

A. Lithium
B. Fluoxetine
C. Valproic acid
D. Quetiapine

- The **manic phase** of **bipolar disorder** may include: feeling very happy, elated or overjoyed. Talking very quickly. Feeling full of energy. Feeling self-important.
- **Lithium and quetiapine** top the lists for all **three phases** of the illness: **mania**, **depression**, and the maintenance phase.
- Previous reports of **fluoxetine**-induced mania/hypomania have been mostly in patients with **depression**. It can be argued that these cases had natural manic episodes of bipolar disorder.

112. H. M was 26 years old male patients who is diagnosed with major **depressive disorder** with a **comorbidity** of migraine. Which one of the following is appropriate drug selection for HM?

A. Amitriptyline
B. Bupropion
C. Fluoxetine
D. Sertraline

- **Amitriptyline**It's used to treat **low mood** and **depression**. It comes as tablets and as a liquid. Amitriptyline is also used for some types of **pain** and to **prevent migraines**.

113. Which of the following is **not recommended** practice while a patient is seizing (**during active seizure**)?

A. Hold the patient not to seize
B. Remove any dangerous obstacles around the patient
C. Loosen tight closing like tie and collars
D. Turn the person on his side

114. Which one of the following is **not** the side effect of **insulin**?

A. Hypoglycemia
B. Weight gain
C. GI irritation
D. Injection site atrophy

- The hormone insulin lowers blood sugar (glucose) levels when blood sugar is too high. If you have type 1 or type 2 diabetes and need insulin to control your blood sugar, taking more insulin than you need can cause your blood sugar level to drop **too low** and result in **hypoglycemia**.
- When there is a lot of **excess insulin** and blood sugar in our

blood stream, it signals our body to put that **excess sugar in storage**. We can store some sugar in our liver and muscles, however, when these are full our body start to store the extra sugar as fat.

- This of course starts to **cause weight gain**.

115. Which one of the following is an **acute** complication of **diabetes** mellitus and needs an **emergency** management?

A. Coronary artery disease
B. Peripheral vascular disease
C. Diabetic ketoacidosis
D. Cerebrovascular disease

- **DKA** results from a **shortage** of insulin; in response, the body switches to burning fatty acids, which produces acidic ketone bodies.
- If you do a urine ketone test, a result of **more than 2+**means there's a high chance you have DKA and you should get medical help immediately.
- The main aims in the treatment of diabetic ketoacidosis are replacing the lost fluids and electrolytes while suppressing the high blood sugars and ketone production with insulin. Admission to an intensive care unit (ICU) or similar high-dependency area or

ward for close observation may be necessary.

116. A 27-year-old woman presents with symptoms of **diarrhea**, racing heart, **weight loss** despite increased **appetite**, and heat intolerance. Her laboratory tests are consistent with moderate **hyperthyroidism**. Which of the following would be appropriate **initial** treatment?

A. Propranolol alone
B. Levothyroxine
C. Propylthiouracil
D. Surgery

- **Propylthiouracil** (PTU) is a medication used to treat hyperthyroidism. This includes hyperthyroidism due to Graves' disease and toxic multinodular goiter.
- **Propylthiouracil**inhibits the production of new thyroid hormone in the thyroid gland. [2] It acts by inhibiting the enzyme thyroid peroxidase, which usually converts iodide to an iodine molecule and incorporates the iodine molecule into amino acid tyrosine.

117. Which of the following measures does **not help** to prevent diabetes complications among diabetic patients on medication?

A. Controlling blood glucose
B. Controlling blood pressure and lipids profile
C. Eliminating all carbohydrates from the diet
D. Prompt detection of diabetic eye and kidney disease

118. Which of the following **oral anti-diabetic** drug is more likely associated with **hypoglycemia** and patients should be informed on the possible episodes of hypoglycemia?

A. Metformin
B. Sulfonylureas
C. Thiazolidinediones
D. Dipeptidyl peptidase inhibitors

- **Sulfonylurea**: A class of **oral hypoglycemic**agents (medications that lower the level of blood glucose) taken by people with type 2 diabetes.

- The sulfonylureas increase the secretion of insulin by the **pancreas**.

119. All of the following are **common** clinical presentation of **diabetes** mellitus except:

A. Dysuria
B. Polydipsia
C. Polyphagia
D. Unexplained weight loss

- **Dysuria** is a complication of urinary tract infection in diabetic patients due to organ damage and even death due to the complexity of pyelonephritis.
- Also, these patients experience urinary retention, urgency, and incontinence during the night due to increased urination to excrete excess glucose.

120. Which one of the following is the **most appropriate therapy** for **all type I** diabetic patients irrespective of its severity?

A. Glyburide
B. Insulin

C. Metformin
D. Pioglitazone

- The pancreas produces very little or no insulin **at all** in people with type 1 diabetes.
- **For this reason**, everyone with type 1 diabetes will **require insulin**.
- Insulin is given under the skin, either as a shot or continuously with an insulin pump.

121. Among the ß-adrenergic blockers which one of the following is drug of choice for hyperthyroidism to blunt the autonomic over activities?

A. Metoprolol
B. Propranolol
C. Atenolol
D. Carvedilol

- **Propranolol** is the preferred agent for β-blockade in **hyperthyroidism** and **thyroid** storm due to its additional effect of blocking the peripheral conversion of inactive T4 to active form T3.

122. Which of the following is a **not possible** complication of Cushing syndrome?

A. Hypotension
B. Abnormal psychiatric manifestation
C. Hyperglycemia
D. Central obesity

- **Cushing's syndrome** is the collection of signs and symptoms due to prolonged exposure to glucocorticoids such as cortisol.
- Signs and symptoms may include **high blood pressure**, **abdominal obesity** but with **thin arms and legs**, reddish stretch marks, a round red face, a fat lump between the shoulders, **weak muscles**, weak bones, acne, and fragile skin that heals poorly. Women may have more hair and irregular menstruation.
- **Occasionally** there may be changes in mood, headaches, and a chronic feeling of tiredness.

123. The use of **dexamethasone** among patients diagnosed with **meningitis** is primarily indicated for:

A. Prevent CNS sequel due to inflammation
B. Possible increase in drug penetration into the CNS
C. Has anti-bacterial activity

D. Prevent transmission to other individuals

- Intravenous administration of glucocorticoids **(usually dexamethasone)** prior to or at the time of administering antibiotics has been associated with a reduction in the rate of hearing loss, other neurologic complications, and mortality in patients with **meningitis caused by S**.
- **Dexamethasone**is a type of corticosteroid medication.
- It is used in the treatment of many conditions, including rheumatic problems, a number of skin diseases, severe allergies, asthma, chronic obstructive lung disease, croup, brain swelling, eye pain following eye surgery, and along with antibiotics in tuberculosis.

124. Which of the following is the most common **cause** of **bronchiolitis**?

A. Respiratory syncytial virus
B. Mycoplasma
C. Parainfluenza virus
D. Adenovirus

- **Bronchiolitis** is caused by a viral infection, usually the respiratory syncytial virus (RSV).
- **RSV** is very common and spreads easily in coughs and sneezes.

Almost all children have had it by the time they're 2.

- In older children and adults, RSV may cause a cough or cold, but in young children it can **cause bronchiolitis**.

125. Which of the following would be the **most appropriate therapy** for the treatment of **myco plasma pneumonia** in a patient with history of poor medication adherence behavior?

A. Erythromycin
B. Clindamycin
C. Azithromycin
D. Amoxicillin

- **Myco plasma pneumonia** bacteria commonly cause mild infections of the **respiratory** system.
- Compared with **erythromycin**, azithromycin is **more effective** in the treatment of **myco plasma pneumonia** in children.
- **Azithromycin** can further shorten the improvement time of clinical symptoms and signs and has few adverse reactions and high safety.

126. Which of the following would be the **most appropriate** choice as **empiric** therapy for **hospital-acquired pneumonia**?

A. Amoxicillin
B. Piperacillin/tazobactam
C. Clindamycin
D. Erythromycin

- For patients with **HAP**with **norisk** factors for **MRSA** infection and **not at high risk of mortality**, prescribe an antibiotic with activity against MSSA like piperacillin-tazobactam, cefepime, levofloxacin, imipenem, or meropenem.

127. Which of the following would be **identified** as a **disadvantage** of **combination** antimicrobial therapy?

A. Prevent the emergence of resistance
B. Broaden the coverage of antimicrobial therapy
C. Risk of drug toxicity
D. Achieve synergy against the infecting pathogen

128. Which of the following statement **is true** regarding antibiotic therapy?

A. Cloxacillin is broad spectrum antibiotics acting against gram positive and negative bacteria
B. Tetracycline's are bacteriostatic antibiotics
C. Metronidazole is more active against gram-negative aerobic bacteria
D. All 3rd generation cephalosporin's are effective against P. aeruginosa

- **Cloxacillin**It is not effective for methicillin-resistant Staphylococcus aureus (MRSA)
- **Cloxacillin** is active against most Gram-positive cocci.
- More recently, metronidazole has emerged as a principal agent for the treatment of anaerobic bacterial infections. It is highly effective against all species of anaerobes except certain non-spore-forming gram-positive bacilli and cocci and is the only agent rapidly bactericidal against the Bacteroides fragilis group.
- Third-generation cephalosporin are medications used in the management and treatment of **gram-negative and gram-positive organisms.**

129. Which one of the following **is correct** about the desirable characteristics of **antimicrobial** therapy in **acute bacterial meningitis?**

A. Low-dose and hydrophilic antibiotics
B. High-dose and hydrophilic antibiotics
C. Low-dose and lipophilic antibiotics
D. High-dose and lipophilic antibiotics

- .

130. Standard **empiric therapy** for 25-year old patients presenting with signs and symptoms consistent with **bacterial meningitis** would **most** appropriately include:

A. Ceftriaxone and vancomycin
B. Linezolid and ampicillin
C. Ceftriaxone and ampicillin
D. Ampicillin alone

- Combining ceftriaxone and vancomycin when managing meningitis recommended by most experts for pneumococcal meningitis caused by resistant strains.

131. Which of the following would be **most** appropriate for the **empiric** treatment of **pneumonia**, where **P. aeruginosa** is a possible pathogen?

A. Azithromycin plus doxycycline
B. Cefotaxime plus clindamycin
C. Amoxicillin/clavulanate plus levofloxacin
D. Piperacillin/tazobactam with/without ciprofloxacin

- **Piperacillin** is used almost exclusively in combination with the beta lactamase inhibitor tazobactam for the treatment of serious, hospital-acquired infections.
- Piperacillin-tazobactam is recommended as part of a three-drug regimen for the treatment of hospital-acquired pneumonia suspected as being due to infection by multi-drug resistant pathogens.
- Piperacillin is used to treat patients **diagnosed** with various internal infections such as **abdominal**, **bacteremia**, **gynecological**, **respiratory**, and **urinary**, mainly **caused by Pseudomonas aeruginosa**and other infectious bacteria.

132. In which of the following patients would a **urinary tract** infection be considered an **uncomplicated** infection?

A. A-25-year female patient with UTI, otherwise healthy

B. A-40-year male patient with UTI and kidney stones

C. A-65-year female patient with UTI, otherwise healthy

D. A-2-year female baby with UTI and history of vesicoureteral reflux.

133. The organism that most commonly causes community-acquired urinary tract infections is?

A. P. aeruginosa

B. Proteus spp

C. E. coli

D. S. saprophyticus

- **E. coli** is the most common community-acquired UTI pathogen and is responsible for 75%–95% of cases. Proteus mirabilis, K. pneumonia, and S. saprophyticus are other frequently observed species.

134. Which of the following regimens would be the most appropriate **treatment** for a **seriously** ill patient with **acute pyelonephritis**?

A. Cotrimoxazole double strength, 1 tablet po BID for 3 days
B. Ciprofloxacin 500mg po BID for 3 days
C. Levofloxacin 500mg po, I dose
D. Ciprofloxacin 500mg po BID for 10 days

- **Acute pyelonephritis** is an exudative purulent localized **inflammation of the renal pelvis** (collecting system) and kidney.
- In an area where there is a low prevalence of antibiotic-resistant bacteria, a fluoroquinolone by mouth such as **ciprofloxacin** or **levofloxacin** is an appropriate **initial choice for therapy**.

135. Which one of the following is the most **hepatotoxic** anti **TB** drug?

A. Isoniazid
B. Ethambutol
C. Pyrazinamide
D. Rifampin

- Among the first-line anti-TB drugs, isoniazid, rifampicin, and pyrazinamide are known to cause hepatotoxicity, but **pyrazinamide** attribute to a **higher percentage** for the drug induced **liver toxicity** compared to the other drugs.

136. All of the following are major risk factors for **MDR-TB** includes except:

A. Cavitary pulmonary TB with high bacterial load
B. Inadequate treatment
C. Non-adherence
D. Transmission from patients with drug susceptible TB

-

137. Penetrating **abdominal trauma** resulting from **acute bacterial secondary** peritonitis can be **best treated** with which **oral antimicrobial** therapy?

A. Ciprofloxacin plus metronidazole
B. Ciprofloxacin
C. Levofloxacin plus amoxicillin-clavulanate
D. Moxifloxacin

- There are **two types** of peritonitis:
- Spontaneous bacterial peritonitis. This infection is caused by bacteria. It can happen when someone has **liver** disease, such as **cirrhosis**, or kidney disease.
- **Secondary peritonitis**. Peritonitis can happen due to a hole, also called a rupture, inside an organ in the **abdomen**.
- In the studies , the combination of **ciprofloxacin** plus **metronidazole** was an effective and safe regimen for the treatment of **intra-abdominal infections**.

138. Which one of the following is **common** and **severe** side effect expected from combing **aminoglycoside** with **vancomycin** during the management of **endocarditis**?

A. Hepatotoxicity
B. Cardiotoxicity
C. Neurotoxicity
D. Nephrotoxicity

-

139. Which one of the following is the preferred **first-line** drug for a patient infected with **Salmonella** typhi?

A. Ceftriaxone
B. Erythromycin
C. Ciprofloxacin
D. Metronidazole

- Salmonella enterica subsp. enterica is a subspecies of Salmonella enterica, the rod-shaped, flagellated, aerobic, Gram-negative bacterium.
- Many of the pathogenic serovars of the S. enterica species are in this subspecies, including that responsible for typhoid.
- Common first-line oral antibiotics for susceptible Salmonella infections are fluoroquinolones (**Ciprofloxacin)**(For adults) and
- Azithromycin (for children). **Ceftriaxone**is an alternative **first**-line treatment agent.

140. RG, a 25-year-old **pregnant** woman, comes to the clinic complaining of vaginal itching. Upon examination, the practitioner notes a **non-odorous discharge**.

Which of the following should be treatment of choice for RG?

A. Amphotericin B for 2 weeksMSTA
B. Oral fluconazole for 2 weeks
C. Miconazole cream for 2 weeks
D. Terbinafine 250 mg po for 2 months

- **Miconazole** Drug class Antifungal medication (imidazole)
- Miconazole, sold under the brand name Monistat among others, is an antifungal medication used to treat ring worm, pityriasis versicolor, and yeast infections of the skin or vagina.
- It is used for ring worm of the body, groin (jock itch), and feet (athlete's foot).
- It is applied to the skin or vagina as a cream or ointment

141. Which of the following is **risk factor** for invasive **fungal** infections?

A. Use of broad-spectrum antibiotics
B. HIV/AIDS patient
C. Use of immunosuppressant drugs
D. All of the above

142. Which of the following is the recommend regimen for a patient newly diagnosed **culture-positive pulmonary TB**?

A. RHZE daily x 2 months, followed by RHx 4 months
B. RHZE daily x 2 months, followed by RH × 2 month
C. RHZE daily x 2 months, followed by HEX 4 months
D. RHZE daily x 4 months, followed by RH x 2 months

Table 16. 10. FDC dosing regimens for paediatric new cases

Weight (kg)	Intensive phase (2 months)			Continuation phase (4 months)		
	RHZ (60,30,150)	RHZE (150,75,400,275)	E (100)	RH (150,75)	RH (60,30)	RH (60,60)
5 to 7	1		1		1	1
8 to 14	2		2		2	1
15 to 20	3		3		3	2

143. Patients at risk for **Pneumocystis** jiroveci pneumonia infections should receive **prophylaxis** with:

A. Ciprofloxacin
B. Acyclovir
C. Trimethoprim/sulfamethoxazole

D. Fluconazole

- Pneumocystis jirovecii (previously P. carinii) is a **yeast-like fungus of the genus Pneumocystis**.
- The causative organism of Pneumocystis pneumonia, it is an important human pathogen, particularly among immune compromised hosts.
- Prior to its discovery as a human-specific pathogen, P. jirovecii was known as P. carinii.
- **Trimethoprim-sulfamethoxazole** — recommend trimethoprim-sulfamethoxazole (TMP-SMX) as the treatment of choice for PCP of any severity in patients without HIV.

144. The drug of choice for **ascariasis** among adult individuals is:

A. Albendazole 100 mg once daily for 3 days
B. Mebendazole 100 mg twice daily for 3 days
C. Ivermectin 200 mg/kg/day for 2 days
D. Diethylcarbamazine 6 mg/kg/day for 5 days

- **Ascariasis** is a disease caused by the **parasitic** roundworm Ascaris lumbricoides.
- Infections have no symptoms in more than 85% of cases, especially if the number of worms is small.

- **Mebendazole** (MBZ) is a medication used **to treat** a number of **parasitic** worm infestations.
- This includes ascariasis, pinworm disease (threadworm), hookworm infections, guinea worm infections, hydatid disease, and giardia, among others.
- It is taken by mouth.

145. Which one of the following **antibiotics** cannot be used for **surgical prophylaxis** in **Ethiopian** practice?

A. Cefazolin
B. Ceftriaxone
C. Piperacillin/tazobactam
D. Metronidazole

-

146. Which one of the following **anticonvulsants** is the **least** preferred and should be avoided if possible during pregnancy?

A. Phenytoin
B. Sodium valproate
C. Lamotrigine

D. Carbamazepine

- **Anticonvulsants**, also known as antiepileptic or ant seizure drugs, are a class of medicines used in the treatment of epilepsy and other conditions that cause seizures. Some may be used to treat bipolar disorder or neuropathic pain.
- **Valproic acid** is not suitable for girls or women who could become pregnant.

147. Which of the following is the **most** feared and series side effect of **anthracyline** anti-cancer drugs?

A. Constipation
B. Renal toxicity
C. Cardiotoxicity
D. Hyperglycaemia

- One of the main concerns with **anthracyclines** is **cardiotoxicity** — damage to the heart muscle.
- The risk of a complication such as heart failure can be particularly high when anthracyclines are used to treat a type of cancer known as acute myeloid leukemia, which on its own raises the risk of heart infections.

148. What is the role of **leucovorin** in **anticancer** regimen containing (leucovorin + methotrexate + 5-FU)

A. To decrease myelosuppressive side effect of 5-FU.
B. To increase the response rate of 5-FU
C. To decrease or counteract toxicity of methotrexate.
D. It is anticancer drug.

- **Folinic** acid, also known as **leucovorin**, is a medication used to **decrease** the toxic effects of **methotrexate** and **pyrimethamine**.
- It is also used in combination with 5-fluorouracil to treat colorectal cancer and pancreatic cancer, may be used to treat folate deficiency that results in anemia, and methanol poisoning

149. Which one of the following is the **most** common risk factor for **lung cancer**?

A. Ionizing radiation
B. Cigarette smoking
C. Viral infection
D. use of anticancer dugs

- Cigarette smoking is the number one risk factor for lung cancer. In the United States, cigarette smoking is linked to about 80% to 90% of lung cancer deaths.

- Using other tobacco products such as cigars or pipes also increases the risk for lung cancer. Tobacco smoke is a toxic mix of more than 7,000 chemicals

150. If there is a decrease in the size of the **prostate** on digital rectal exam in a patient who received **treatment** for **prostate cancer**, it is called:

A. Cure
B. Partial response
C. Complete Response
D. Progressive

- A partial response is a decrease in the size of a tumor or in the amount of cancer in the body, and a complete response is the disappearance of all signs of cancer in the body.

151. Which of the following is true regarding the characteristic of cancers?

A. Cancer is unregulated cell growth with invasion of nearby tissues
B. Cancers of epithelial tissues are called carcinomas

C. Malignant tumor is fast growing and poorly differentiated

D. All of the above are true

152. A **stage II** breast cancer patient is planned to get chemotherapy followed by **mastectomy**. This type of chemotherapy is called:

A. Induction
B. Adjuvant
C. Consolidation
D. Neoadjuvant

- **Neoadjuvant** therapy refers to the systemic treatment of breast cancer prior to definitive **surgical** therapy.

153. Which of the following are true about the design of **chemotherapy** regimens?

A. They are always designed with a cure in mind.
B. Using drugs with the same mechanism of action is better than targeting multiple targets

C. Combination therapy is the standard of care for most types of cancer.

D. Because of they are safe; they are given for long time continuously.

154. A patient recently had **surgery** to remove a diagnosed **breast** cancer. It had invaded her **lymphnodes**, but her surgeon is confident he removed totally. Treatment given to decrease the **chance** of **recurrence**, even though there is **no trace** of cancer left is known as:

A. Primary treatment

B. Neoadjuvant treatment

C. Adjuvant treatment

D. Palliative chemotherapy

- **Adjuvanttherapy** is treatment given after your breast surgery. It's used to kill any cancer cells that may be left in your breast or the rest of your body.
- **Adjuvant** therapy lowers the chance of having your breast cancer come back.
- The goal of a **primary treatment** is to completely remove the

cancer from your body or kill all the cancer cells. Any cancer treatment can be used as a primary treatment, but the most common primary cancer treatment for the most common types of cancer is surgery.

- **Palliativecare** is care meant to improve the quality of life of patients who have a serious or life-threatening disease, such as cancer.
- It can be given with or without curative care. Palliative care is an approach to care that addresses the person as a whole, not just their disease.

155. Which one of the following drug is categorized as highly **emetogenic** anticancer drug?

A. High dose of cyclophosphamide
B. Paclitaxel
C. Dexamethasone
D. Bleomycin

- **Anticancer** drug has high **emetogenic** potential… (**High emetogenic Cisplatin** Cyclophosphamide **Dacarbazine** Mechloretamine.

156. What is the **purpose** of giving of **Neoadjuvant** in the treatment of cancer patients?

A. To remove the micro metastasis after surgery
B. To remove the micro metastasis before surgery
C. To shrink the size of the tumor and enables to be respectable before surgery.
D. To completely remove the cancerous cell and to cure.

- **Neoadjuvant** therapy is the administration of therapeutic agents **before** a **main** treatment.
- **Oneexample** is Neoadjuvant hormone therapy prior to radical radiotherapy for adeno carcinoma of the prostate.
- **Neoadjuvant** therapy aims to **reduce** the **size** or **extent** of the **cancer** before using **radical treatment** intervention, thus both making procedures easier and more likely to succeed and reducing the consequences of a more extensive treatment technique, which would be required if the tumor were not reduced in size or extent.

157. Which one of the following **cancer** can be effectively **prevented** screening with **Pap** smear?

A. Cervical cancer
B. Lung cancer
C. Breast cancer

D. Head and neck cancer

- The Papanicolaou test (abbreviated as Pap test, **also known as Pap smear** (AE), cervical smear (BE), cervical screening (BE), or smear test (BE)) is a method of cervical screening **used to detect potentially precancerous** and cancerous processes in the cervix (opening of the uterus or womb) or colon (in both men and women).

158. Which of the following drug is used to **prevent severe** nausea and **vomiting** induced bay highly ematogenic drugs during chemo therapy?

A. Metoclopramide
B. Chlorpromazine
C. Ondansetron
D. Prednisilone

- Ondansetron Drug class is **Serotonin** 5-HT3 receptor antagonist
- **Ondansetron**, marketed under the brand name Zofran, is a medication used to prevent nausea and vomiting caused by cancer chemotherapy, radiation therapy, or surgery.
- It is also effective for treating gastroenteritis.
- It is ineffective for treating vomiting caused by motion sickness.
- It can be given by mouth or by injection into a muscle or into a

vein.

159. **Hemorrhagic cystitis** due to cyclophosphamide can be prevented by administration of:

A. Leucovorin
B. MESNA
C. Folic acid
D. Dexamethasone

- **Hemorrhagic cystitis** or haemorrhagic cystitis is an **inflammation** of the **bladder** defined by **lower urinary** tract symptoms that include dysuria, hematuria, and hemorrhage.
- The disease can occur as a **complication** of cyclophosphamide, ifosfamide and **radiation** therapy.
- In addition to hemorrhagic cystitis, temporary hematuria can also be seen in bladder infection or in children as a result of viral infection.
- Unfortunately **mesna** is ineffective as a treatment once hemorrhagic cystitis has developed. Although rare, once a case of radiation-induced hemorrhagic cystitis is diagnosed there is no empirically-proven treatments to heal this type of condition, which can severely degrade a patient's quality of life and might possibly lead to kidney failure with risk of death.

160. **Hand-foot** syndrome is commonly associated with which anti-cancer drug?

A. 5 FU
B. Methotrexate
C. Carboplatin
D. Paclitaxel

- **Fluorouracil** (5-FU), sold under the brand name Adrucil among others, is a medication used to treat cancer. By injection into a vein it is used for colon cancer, esophageal cancer, stomach cancer, pancreatic cancer, breast cancer, and cervical cancer. As a cream it is used for actinic keratosis, basal cell carcinoma, and skin warts.
- **Side effects** by frequency include: **Mucositis** Photosensitivity Hand-**foot syndrome** **Oesophagitis** GI ulceration and bleeding **Proctitis**.

161. **Nephro toxicity** is common and dose limiting toxicity of which **anticancer** drug?

A. Oxaliplatin
B. Cisplatin
C. Vincristine

D. Paclitaxel

- Different strategies have been offered to diminish or prevent **nephrotoxicity** of cisplatin.
- The standard approach for prevention of CIN is the administration of lower doses of **cisplatin** in combination with full intravenous hydration prior and after cisplatin administration.

162. Most of **anticancer** drugs **cause** myelosuppression. Which of the following is the most common, severe and acute problem of myelosuppression?

A. Anaemia
B. Thrombocytopenia
C. Neutropenia
D. Thrombocytosis

- **Bone marrow** suppression also known as **myelotoxicity** or myelosuppression, is the decrease in production of cells responsible for providing immunity (leukocytes), carrying oxygen (erythrocytes), and/or those responsible for normal blood clotting (thrombocytes).
- Bone marrow suppression is a serious side effect of chemotherapy and certain drugs affecting the immune system

such as **azathioprine**. The risk is especially high in **cytotoxic** chemotherapy for **leukemia**.

163. Choose the type of cancer which is leading cause of death among men:

A. Prostate cancer
B. Breast cancer
C. Cervical cancer
D. Lung cancer

- **Lung and bronchus cancer** is responsible for the most deaths with 130,180 people expected to die from this disease. That is nearly three times the 52,580 deaths due to colorectal cancer, which is the second most common cause of cancer death. Pancreatic cancer is the third deadliest cancer,

164. Which of the following cancer has relatively **lowtendency** to **metastasis**and long survival rate?

A. Lung cancer
B. Breast cancer
C. Head and neck cancer
D. Cancer of pancreas

- A recent study illustrated that it takes about 12 years for the initiating mutation to result in the non-metastatic founder cell; another 7 years to acquire the metastatic ability, and then 3 more years to cause death. In other studies, the small **pancreaticcancer** was demonstrated to have a slow progressive rate.

165. Which one of the following is the **most appropriate** treatment option for **intermittent asthma**?

A. Long acting beta agonists
B. Cromolyn
C. Short acting beta agonists
D. Corticosteroids

- **Intermittentasthma** is a condition where asthma symptoms occur no more than two days a week with nighttime asthma flare-ups occurring no more than twice a month.
- Short-Acting Beta-Agonists (SABAs): Are typically used as "rescue" medications to provide quick relieve of asthma symptoms.
- Examples of these short-acting medications include: albuterol (AccuNeb, Proventil HFA, ProAir HFA, Ventolin HFA) and levalbuterol (Xopenex, Xopenex HFA).

166. Which one of the following is **not possible** adverse effect of **B2-agonists** like **salbutamol** and **salmeterol** during the treatment of asthma?

A. Bradycardia
B. Tremor
C. Hypokalemia
D. Palpitation

- The most common side effects **salbutamol** and **salmeterol**are **fine tremor**,anxiety,dry mouth,palpitation,tachycardia,High doses or prolonged use may cause **hypokalemia**,hypotension,

167. Which one of the following medication has **narrow therapeutic** window and should be used with caution in the management of asthma?

A. B2-Agonists
B. Theophylline
C. Anticholinergic
D. Corticosteroids

- **Theophylline** is a medication used to treat asthma and chronic

obstructive pulmonary disease as a **second-line drug**.

- Theophylline is an oral bronchodilator with a narrow therapeutic window, used in the treatment of conditions such as asthma and chronic obstructive pulmonary disease (COPD).

168. LD was a 35 years old male patient presented with **productive cough** for one week with **absence** of any other symptoms of infection (no fever, no night sweet, no shortness of breath but the cough is bothersome).

Which one of the following is the most appropriate management option for LD?

A. Acetyl cysteine
B. Amoxicillin
C. Salbutamol
D. Cetirizine

- **Acetyl cysteine** is in a class of medications called mucolytic agents.
- It works by thinning the mucus in the air passages to make it **easier to cough** up the mucus and clear the airways.

169. Which one of the following can **decrease** uric acid **production** but it is not effective in acute **gouty arthritis?**

A. Colchicine
B. Allopurinol
C. NSAIDs
D. Probenecid

- **Allopurinol**, sold under the brand name Zyloprim among others, is a medication used to **decrease high** blood uric acid levels. It is specifically used to **prevent gout**, prevent specific types of **kidney stones**, and for the high uric acid levels that can occur with chemotherapy. It is taken by mouth or injected into a vein.

170. **Allopurinol** is not the anti-hyperuricemia drug of choice in patients with:

A. A history of urinary stones
B. C. Overproducers of uric acid
C. Impaired renal function
D. Under-excretory of uric acid

- **Allopurinol** does not appear to be associated with **kidney**

function decline, and clinicians should consider other potential contributors when faced with kidney function decline in patients with gout.

171. Of first-line DMARDs, which one has been shown to be superior in efficacy by different studies and hence most commonly being prescribed currently?

A. Methotrexate
B. Sulfasalazine
C. Hydroxychloroquine
D. Leflunomide

- Disease-modifying anti-rheumatic drugs (DMARDs) comprise a category of otherwise unrelated drugs defined by their use in rheumatoid arthritis to slow down disease progression.
- **Methotrexate** is usually the **first medicine** given for rheumatoid arthritis, often with another DMARD and a short course of steroids (corticosteroids) to relieve any pain.
- These may be combined with biological treatments.
- The most common conventional DMARDs are **methotrexate**, **sulfasalazine**, **hydroxychloroquine**, and **leflunomide**.
- Azathioprine and other drugs are used much **less frequently**.

172. Which of the following **non-pharmacological** measures is not recommended for **acute gout** attack?

A. Mobilization of joint
B. Abstinence of alcohol
C. Ice packs
D. Dietary modification

- **Acute gout attacks** are characterized by a rapid onset and **escalation** with joint pain typically **peaking** within 24 hours of attack onset. An acute attack often begins to remit after 5 to 12 days without intervention, but complete resolution may take longer in some patients.
- For immediate relief of gout if you have a gout flare-up on the big toe, rest and elevate your foot. You can try home remedies such as applying ice, taking over-the-counter pain medications, and drinking lots of water to help provide relief.
- First-line therapy for acute gout is non-steroidal anti-inflammatory drugs or corticosteroids, depending on comorbidities; colchicine is second-line therapy. After the first gout attack, modifiable risk factors (e.g., high-purine diet, alcohol use, obesity, diuretic therapy) should be addressed.

173. Which of the following drugs used in management of **osteoporosis** has **longest** biologic **half-life**?

A. Alendronate
B. Calcium supplements
C. Raloxifene
D. Vitamin D

- **Alendronicacid**, sold under the brand name Fosamax among others, is a bisphosphonate medication used to treat **osteoporosis**and **Paget's**disease of bone.
- It is taken by mouth.
- After sequestration into bone, the elimination of **alendronate** is very prolonged.
- The terminal half-life was estimated to be greater than 10 years.

174. All of the following can be **adverse** effects of **long** term systemic **steroid** use **except**:

A. Osteoporosis
B. Cushing syndrome
C. Hypertension
D. Weight loss

- Nearly everyone on a systemic steroid for more than a month suffers from some adverse effects, depending on daily dose and how long they have been on the drug.
- The main concerns are **infections**, **hypertension**, **diabetes**,

osteoporosis, **avascularnecrosis**, **myopathy**,increased appetite,

- **Weight gain**, cataracts.

175. FM is 58 years old woman diagnosed with **osteoporosis** with **mild** symptoms and no any **significant** bone **problem** is happened so far. All of the following intervention can decrease the disease progression and improve the symptoms of FM except:

A. Depot medroxy progesterone acetate
B. Vitamin D supplementation
C. Calcitonin
D. Tamoxifen

- Medroxy progesterone acetate (MPA), also known as depot medroxy progesterone acetate (DMPA) in injectable form and sold under the brand name Depo-Provera among others, is a hormonal medication of the progestin type.
- It is used as a method of **birth control** and as a part of menopausal hormone therapy.
- It is also used to treat **endometriosis**, abnormal uterine bleeding, abnormal sexuality in males, and certain types of cancer.
- The medication is available both alone and in combination with an estrogen. It is taken by mouth, used under the tongue, or by

injection into a muscle or fat.

176. Which one of the following is the **most** potent **corticosteroid** among the given **alternatives**?

A. Dexamethasone
B. Methyl prednisolone
C. Prednisone
D. Hydrocortisone

- **Dexamethasone** is a type of corticosteroid medication. It is used in the treatment of many conditions, including rheumatic problems, a number of skin diseases, severe allergies, asthma, chronic obstructive lung disease, croup, brain swelling, eye pain following eye surgery, and along with antibiotics in tuberculosis.
- **Prednisone** is a glucocorticoid medication mostly used to suppress the immune system and decrease inflammation in conditions such as asthma, COPD,
- **Methyl prednisolone** is a synthetic glucocorticoid, primarily prescribed for its anti-inflammatory and immunosuppressive effects.
- **Hydrocortisone** is the name for the hormone **cortisol**when supplied as a medication.

177. Which one of the following is the **first line** symptomatic treatment for **non-productive** cough?

A. Acetyl cysteine
B. Dextromethorphan
C. Amoxicillin
D. Guaifenesin

- **A non-productive cough**, also known as a dry cough, refers to a cough that does not produce sputum. There can be several causes, including viral illness, asthma, GERD, and OSA. Non-productive coughs are typically self-limiting, however, a chronic cough may signify a more serious underlying cause.
- Cough suppressants (anti tussives), like **Dextromethorphan** (Robitussin, Delsym), help by controlling your cough reflex.
- They usually work better for a "dry" (non-productive) cough, which usually results from irritation.

178. LR is a 58 years old man with past medical history of **persistent asthma** which is controlled with inhalational **fluticasone** + **salmeterol**. Last week he was diagnosed with **myocardial infarction** that requires **anti platelet** and **B-blockers**.

Which one of the following is **not** appropriate medication selection for LR?

A. Propranolol should be avoided for this patient
B. Metoprolol can be used due to the benefit outweighs the risk
C. **Aspirin is safer anti platelet agent than clopidogrel for this patient**.
D. Bisoprolol can be used among the b-blockers

- **Aspirin-induced asthma (AIA)** refers to the development of bronchoconstriction in asthmatic individuals following the ingestion of aspirin.
- This syndrome encompasses classic symptoms of chronic rhinoconjunctivitis, nasal polyps, and asthma akin to a protracted viral respiratory infection.

179. For majority of **asthmatic** patients which one of the following **intervention** will have the **least** importance in the management of the disease?

A. Instructing the appropriate use of inhalational devices
B. Regular physical exercise

C. Identification and avoidance of any triggering factors
D. Patient education regarding medication adherence

-

180. Which one of the following is used for treatment of **megaloblasticanaemia**?

A. Cyanocobalamin Img/day
B. Ferrous sulphate 325mg TID
C. Folic acid 5 mg/day
D. A and C

- **Megaloblastic anemia** is a form of macrocytic anemia, a blood disorder that happens when your bone marrow produces stem cells that make abnormally large red blood cells.
- **Megaloblasticanemia** is a type of **vitamindeficiency** anemia that happens when you don't get enough vitamin B12 and/or vitamin B9 (folate).
- **Megaloblastic** anemia caused by a **lack of folate** may be treated with oral or intravenous **folic acid**supplements.
- **Cyanocobalamin** is a manufactured version of vitamin B12. It's used to treat and prevent vitamin B12 deficiency anaemia (when you have low levels of this vitamin in your body).
- Your body requires vitamin B12 to make red blood cells.

181. Which one is **not** the **consequence** of poor medication **adherence** among patients?

A. Substantial worsening of the underlying disease
B. Death from the underlying disease and/ or its complications
C. Decrease health care costs.
D. Development of drug resistance and therapeutic failure.

■

182. Which one of the following is a **major** cause of adverse drug reactions among **elderly patients**?

A. Poly pharmacy
B. Female gender
C. Drug-drug interactions
D. Expensive medications

■

183. Which of the following pharmacokinetic parameters has the most important and **consistent age**-related changes that can **affect medication** prescribing?

A. Gastrointestinal absorption
B. Renal excretion
C. Hepatic metabolism
D. Distribution

- One of the most important pharmacokinetic changes associated with aging is decreased renal elimination of drugs.
- After age 40, glomerular filtration rate (GFR) decreases an average of 8 mL/min/1.73 m2/decade (0.1 mL/sec/m2/decade); however, the age-related decrease varies substantially from person to person.
- Excretion predominantly occurs via renal elimination in the kidneys. The total size of the kidneys decreases with age, as does the number of functioning nephrons.
- There is also decreased renal blood flow with increasing age. Aging is also accompanied by a reduction in both glomerular function and tubular function.

184. A patient was taking **furosemide** 20 mg IV bid for the treatment of **CHF**. When the patient was

discharged from the **hospital** switching IV route to per oral (PO) was considered.

What should be the appropriate PO conversion dose if bioavailability of **furosemide** is 50%?

A. 40 mg PO bid
B. 10 mg PO bid
C. 20 mg PO bid
D. 20 mg PO tid

■

185. A mother having an **infant** of 2 month brought her child to you looking for help. When you examine the child, his skin was **gray-blue** (cyanosis), **anemic**, **irregular** respiration, **hypothermia** and the color of his **stool changed**. The mother said that this all happed after she gave an **unknown** drug without **consulting** a health professional.

What do you **guess** the most likely **drug** the child was taking?

A. Tetracycline
B. Rifampicin
C. Chloramphenicol
D. Streptomycin

- **Intravenous chloramphenicol** use has been associated with the so-called gray baby syndrome.
- This phenomenon occurs in newborn infants because they do not yet has fully functional liver enzymes (i.e. UDP-glucuronyl transferase), so chloramphenicol remains **UN metabolized** in the body.
- This causes several symptoms, including **low blood** pressure and **cyanosis**.

186. An antibiotic which can be used in the management of **acne vulgaris**

A. Amoxicillin
B. Gentamycin
C. **Tetracycline**
D. Isoniazid

- **Acne, also known as acne vulgaris**, is a long-term skin disease that occurs when dead skin cells and oil from the skin clog hair follicles. Typical features of the condition include blackheads or

whiteheads, pimples, oily skin, and possible scarring. It primarily affects skin with a relatively high number of oil glands, including the face, upper part of the chest, and back.

- The resulting appearance can lead to anxiety, reduced self-esteem, and, in extreme cases, depression or thoughts of suicide.
- **Tetracycline** works by slowing down the growth of the bacteria that cause acne. It also acts as an anti-inflammatory, so it helps make pimples less swollen and red.
- **Tetracycline** is used to treat moderate to severe acne, although it's sometimes prescribed for mild inflammatory acne that is particularly stubborn.

187. A **lot** of water should be taken during treatment". This advice is **givenfor**

A. Cotrimoxazole
B. Mebendazole
C. Metronidazole
D. Amoxicillin

- The medication could damage the kidneys or lead to kidney stones if too much of it reached the kidney at the same time (e.g., **cotrimoxazole**, indinavir) – water helps to “dilute” the extra medication so that too much medication does not go

through the kidneys at once.

188. **Chew** before swallowing". This advice is given for one of the following drug

A. Metronidazole capsule
B. Paracetamol tablet
C. Niclosamide tablet
D. Praziquantel tablet

- **Niclosamide**, sold under the brand name Niclocide among others, is a medication used to treat tapeworm infestations. This includes diphyllobothriasis, hymenolepiasis, and taeniasis. It is **not effective** against other worms such as pinworms or roundworms. It is taken by mouth.
- **Niclosamide**may be taken on an empty stomach (either 1 hour before or 2 hours after a meal).
- However, to prevent stomach upset, it is best taken after a light meal (for example, breakfast). Niclosamide tablets should be thoroughly chewed or crushed and then swallowed with a small amount of water.

189. A patient presents to the emergency department with an **extreme headache** after a thorough workup,

the attending physician concludes that the pain is due to **increased intracranial pressure**.

Which **diuretic** would work best to reduce this pressure?

A. Acetazolamide
B. Furosemide
C. Mannitol
D. HCT

- **Intracranial pressure** (ICP) is the pressure exerted by fluids such as cerebrospinal fluid (CSF) inside the skull and on the brain tissue. ICP is measured in millimeters of mercury (mmHg) and at rest, is normally 7–15 mmHg for a supine adult.
- **Furosemide** administration effectively lowers intracranial pressure in newborn preterm and term rabbit pups. This effect may be due to the diuretic action of the drug, its ability to inhibit cerebrospinal fluid production.
- **Mannitol** is widely used in the control of raised intracranial pressure following brain injury.

190. A 55-year-old male with **kidney stones** has been placed on a diuretic to **decrease calcium** excretion.

However, after a few weeks, he **develops** an **attack of gout**. Which diuretic was he taking?

A. Furosemide
B. Spironolactone
C. HCT
D. Triamterene

- **Hydrochlorothiazide** (HCTZ or HCT) is a diuretic medication often used to treat high blood pressure and swelling due to fluid buildup.
- Other uses include diabetes **insipidus**, renal tubular acidosis, and to decrease the risk of kidney stones in those with a high calcium level in the urine.
- **Diuretics** have been associated with **attacks of gout**, but a low dose of **hydrochlorothiazide** does not seem to increase risk. Other medications that increase the risk include niacin, aspirin (acetylsalicylic acid).

191. A 45-year-old man was just started on therapy for **hypertension** and developed a **persistent**, dry cough. Which is most likely **responsible** for this **side effect**?

A. Enalapril

B. Nifedipine
C. Losarten
D. Prazosin

- The most common side effects of **enalapril** include increased serum creatinine (20%), dizziness (2–8%), low blood pressure (1–7%), syncope (2%), and dry cough (1–2%)

192. One of the following **measurements** of **adherence** technique differs from the other

A. Self-reports
B. Pill counts
C. Pharmacy refill records
D. Detection of drugs metabolites in plasma

-

193. Which one of the following statements is False?

A. When drops and ointment are used, use the drops first then wait5minutes before applying the eye ointment.

B. **When two drops are used and if one drop causes stinging it should be used first**.
C. It is better to use drops during the day and then use eye ointment in the evening
D. If the patient is using two types of eye ointment, apply the first, and then wait 10 minutes before applying the second.

-

194. One of the following actions is good when **asthmatic** patient inhales **salbutamol?**

A. Breathe out after pressing his inhaler and Inhale rapidly
B. Do not breathe in through his nose, but in his mouth
C. press down on his inhaler at the end of inhalation (or within the first second of inhalation)
D. Press his inhaler several times while he is inhaling

- When you inhale **salbutamol** close your lips around the inhaler so that you form a tight seal.
- Tilt your head back slightly.
- As you slowly begin to breathe in through your mouth,

press down once on the top of the inhaler.
- Keep breathing in slowly, as deeply as you can

195. Which of the following found on **labeling** but not on the **prescription** paper?

A. Drug name
B. Expiry date
C. Patient name
D. Drug dose and formulation

-

196. All of the following are **true** about **inhalers** except

A. While patient is breathing, advice to breath in mouth not nose
B. Use bronchodilator inhaler before corticosteroid inhale
C. Use MDI with mask for older children
D. The incidence of systemic side effect is reduced

- Younger children unable to use a mouthpiece or hold their breath may use a spacer with a face mask that delivers the dose over about 5 tidal breaths.

- Children and adolescents should be encouraged to use a spacer with all metered-dose inhaler medications.

197. All of the following are **true** except

A. Using triplicate prescription reduce prescription forgeries
B. Prescription for narcotics should be stored for 2 years
C. Psychotropic drugs should be stored separately under lock & key
D. Separate damage products from usable stock

-

198. Which of the following is a **mal** practice when administering eye drop and eye ointment?

A. Cool eye ointment to detect the drop enter to the eye
B. Warm eye drops to increase the flow
C. Long acting eye drops is used before short acting eye drops

D. A stinging eye drop should be used before a non-stinging eye drop

-

199. To measure 15 mL of **cough syrup** a should be used

A. 5 mL syringe, used thrice
B. 10 mL graduated cylinder used twice
C. 20 mL graduated cylinder
D. 50 mL graduated cylinder

-

200. In FEFO stock rotation

A. A drug with earlier arrival is to be dispended first
B. A drug with higher efficacy is to be dispended first
C. A drug with near expiry to be dispensed first
D. A drug with better economic value is to be dispensed first

- First Expired, First out (FEFO) is a term used in field inventory management to describe a way of dealing with the logistics of

products that have a limited shelf life. These items include perishable products or consumer goods with a specified expiration date.

201. Not true about **suppositories** and **pessaries**

A. It is better to use pessaries and suppositories at night time
B. Use middle finger to insert pessaries and index finger fornsuppositories
C. When inserting pessaries for a pregnant woman use finger method
D. None of the above

▪

202. Which of the following is not true?

A. Discard eye drop one month after opening
B. When instilling ear drop for a 2-year old baby, pull the ear back ward and down ward
C. Blink the eyelid after administration of eye ointment
D. Opening many stock containers at the same time will reduce time waste

-

203. A drug label says to store the drug at the refrigerator, the drug should be stored

A. 15 °C
B. 8-15 °C
C. 0-8 °C
D. <30°C

- Refrigerated medications should be stored at temperatures between 35F and 46F (2C and 8C)

204. Which one of the following is not true?

A. When administering oral solution to a child lie a child on a flat surface
B. Use cotton wool to remove excess ear wax
C. The most comfortable position to apply ear drop is lying down
D. Before instilling eye drop clean the eye with cotton wool to remove any discharge

- Good Technique for Giving Liquid Medicine:
  1. Equipment: Plastic medication syringe or dropper (not a spoon)
  2. Child's position: Sitting up (Never lying down)
  3. Place the syringe beyond the teeth or gum line. ...
  4. Goal: Slowly drip or pour the medicine onto the back of the tongue. ...
  5. Do not squirt medicine into the back of the throat

205. Currently one of the following practices is not the scope of pharmacists in Ethiopia

A. Quality control of drug and medical advice
B. Promotion of drugs and medical advice
C. Veterinary drug dispensing
D. Drug information service

-

206. All prescription containing the following drug should be kept for at least5 years except

A. Morphine
B. Diazepam

C. Oxycodone
D. Imipenem

- Imipenem (trade name Primaxin among others) is an intravenous β-lactam **antibiotic** discovered by Merck scientists Burton Christensen, William Leanza, and Kenneth Wildonger in the mid-1970s.

207. Which one of the following is true in **dispensing** of drug for inpatient?

A. In bulk ward stock order, the pharmacy charge to patient is facilitated
B. Individual drug order is the preferred system from a patient care perspective
C. Bulk ward systems are used in life threatening emergency situation
D. In bulk ward system there is a possibility of low error

-

208. Your order is for **erythromycin** suspension 0.75 g po qid. You have a solution in stock which is 250 mg/5 ml.

What amount is the patient will take for each dose?

A. 5 mL
B. 15 mL
C. 10 mL
D. 20 mL

-

209. A drug label says to store the drug between **15** and **25** degrees centigrade. The drug should be stored

A. In a warm room
B. In the refrigerator
C. On the pharmacy shelf
D. In a cool room

- medication that should be stored at
- **room temperature** means between 15 to 25 degrees Celsius;
- **Cool temperature** means between 8 to 15 degrees Celsius;
- **Refrigeration means** between 2 to 8 degrees Celsius; and
- **Freezing temperature means** -10 to -25 degrees Celsius

210. A prescription containing of **chlordiazepoxide** should be kept in the pharmacy for at least

A. 2 years
B. 3 years
C. 4 years
D. 5 years

- **Chlordiazepoxide**, sold under the trade name Librium among others, is a medication of the benzodiazepine type, used to treat alcohol withdrawal and anxiety disorders.

211. You have **5** g of **sodium chloride**. How much normal saline can you make?

A. 277.8 mL
B. 1111.1 mL
C. 555.56 mL
D. 2222.2 mL

-

212. Which of the following is not secondary **non adherence?**

A. A patient stops taking a medication due to the side effect of the medication
B. A patient on ART is not able to take his medication as he is with his friends
C. A patient has forgotten to take his medication as he was busy
D. A patient was not able to take her pills as the pills were not in the market

▪

213. How much of a 15% w/v solution would be required to prepare 100 mL of a 0.03% w/v solution?

A. 0.02 mL
B. 0.2 mL
C. 0.1 mL
D. 0.25 mL

▪

214. How many mL of potable water are required to dissolve 7 g of a solid, which is soluble 1 in 2.5 parts of water?

A. 1.5 mL
B. 10.5 mL
C. 17.5 mL
D. 15 mL

▪

215. Suppose that Abraham is 42 years patient came to TASH with an assessment of **UTI** and **typhoid** fever, then the physician prescribed **ciprofloxacin** 500mg po bid for 7 days and **norfloxacin** 400mg po bid for 7 days. **Finally**, you are asked to identify types of **DTP** in the above prescription paper hence what DTP do you identify?

A. Needs additional drug therapy
B. C. Non compliance
C. Dose too low
D. Unnecessary drug therapy

- The Centers for Medicare and Medicaid (CMS) define an Unnecessary Drug as any drug used in excessive dosage (including duplicate drug therapy); for excessive duration; without adequate monitoring; without adequate indications for its use; in the presence of adverse consequences which indicate the dose should be reduced.

216. **Flumazenil** is an antidote for

A. Diazepam
B. Morphine
C. Phenobarbitone
D. Amitriptyline

- **Flumazenil**, sold under the brand name Anexate, is a medication used to reverse the effects of **benzodiazepines**.
- **Flumazenil** is useful in people who become excessively drowsy after use of **benzodiazepines** for either diagnostic or treatment purposes.
- It has been used as an **antidote** in the treatment of benzodiazepine overdoses.

217. A 33-year old woman ingested 15-20 grams of an **analgesic** known to become metabolized to a toxic

Quinoneamine. A few hours after ingestion she presented to the Emergency Department with signs of **nausea**, **vomiting**& generalized **malaise**. A day later she developed **right upper** quadrant **abdominal pain** with elevated **plasma** AST &ALT levels. The specific **antidote** that should be used to treat this patient in order to prevent **liver** failure is:

A. Acetaminophen
B. Aspirins
C. Amyl nitrate
D.N-acetylcysteine

- **Acetylcysteine**, also known as **N-acetylcysteine** (NAC), is a medication that is used to treat **paracetamol** (acetaminophen) **overdose**, and to loosen thick mucus in individuals with cystic fibrosis or chronic obstructive pulmonary disease.
- It can be taken intravenously, by mouth, or inhaled as a mist. Some people use it as a dietary supplement.

218. A 39-year-old carpenter has taken **two bottles** of **liquor** from the local shop. After about an hour, he develops **confusion**, **vomiting** and **blurring** of vision. He has been brought to the emergency department. He should be given;

A. Naloxone
B. Flumazenil
C. Diazepam
D. Ethyl alcohol

- **Liquor**, also known as spirits are alcoholic beverages made of plants or grains and concocted into a potent drink.
- **Diazepam** is a **benzodiazepine** indicated for the management of **anxiety** disorders or for the short-term relief of the symptoms of anxiety. In **acute alcohol withdrawal**, diazepam may be useful in the symptomatic relief of acute **agitation**, tremor, impending or acute delirium tremens and **hallucinations**.

219. A 48-year-old hypertensive patient has been successfully **treated with** a **thiazide** diuretic for the last 5 years. Over the last 3 months, his **diastolic** pressure has steadily increased, and he was started on an **additional antihypertensive** agent. He complains of

several instances of being unable to **achieve** an **erection** and not being able to complete **three** sets of **tennis** as he once did.

Which is the likely **second** antihypertensive medication?

A. Captopril
B. Metoprolol
C. Losartan
D. Minoxidil

- **Metoprolol** is used for a number of conditions, including hypertension, angina, acute myocardial infarction, supraventricular tachycardia, ventricular tachycardia, congestive heart failure, and prevention of migraine headaches.

220. A 75-year-old **woman** with **hypertension** is being treated with a **thiazide**. Her blood pressure **responds** well and reads at **120/76** mm Hg. After several months on the medication, she complains of being **tired** and **weak**. An **analysis** of the **blood** indicates **low values** for which of the following?

A. Calcium
B. Potassium
C. Glucose
D. Sodium

-

221. An 87-year-old **woman** who is taking multiple medications for her "**heart disease**" is prescribed **gentamicin** for diverticulitis. After a few days of taking the **antibiotic**, she complains of **dizziness** and **tinnitus**. What "heart medication" might she be on?

A. Spironolactone
B. HCT
C. Mannitol
D. Ethacrynic acid

- **Ethacrynic acid**categorized as loop diuretics
- Etacrynic acid, also known as ethacrynic acid and sold under brand name Edecrin among others, is a medication used to treat **swelling** caused by **heart failure**, liver failure, and kidney problems and for high blood pressure.
- In high blood pressure it is **not a preferred option**.

222. Suppose that Bewuketu is 50 yrs old **man** diagnosed with **arthritis** and **peptic ulcer diseases**, and then clinical pharmacist wants to give drug for **his arthritis** that cannot exacerbate his **PUD**. If so what will be best among the following **NSAIDs**.

A. Aspirin
B. Meloxicam
C. Ibuprofen
D. Indomethacin

- **Meloxicam**, sold under the brand name Mobic among others, is a non steroidal anti-inflammatory drug (NSAID) used to **treat** pain and inflammation in **rheumatic** diseases and osteoarthritis. It is used by mouth or by injection into a vein.
- It is recommended that it be used for as short a period as possible and at a low dose.
- **Meloxicam** at low doses (7.5 milligrams) inhibits COX-2 and not COX-1. That means it can **reduce** pain and inflammation **without irritation** of the stomach lining or an increased risk of **stomach ulcers**.
- Research has found that serious upper gastrointestinal events at the 7.5 mg dose occur in fewer than 1 in 3,000 people.

223. Abdi is HIV/AIDS patient came to Tikur Anbessa Specialized Hospital for the compliant of **joint swelling**, **pain** and **inflammation**. The physician finally confirmed that Abdi has also **arthritis**. Which of the following class of drug **should not** be given for **prolonged** time for Abdi who is RVI patient?

A. Diclofenac
B. Meloxicam
C. Corticosteroids
D. Indomethacin

- Most people with RA are advised to take a non-steroidal anti-inflammatory drug to decrease pain and inflammation.
- NSAIDs are sold over-the-counter, under such names as Advil and Aleve, as well as by prescription,
- **Steroids (Corticosteroids)**Fast-acting steroids, such as prednisone, are particularly useful during initial treatment, before other RA medications have had a chance to take effect (often 12 weeks or more).
- One advantage of steroids is that they can be injected into joints.
- Injected steroids can provide targeted pain relief to one or two painful joints with limited side effects.
- Experts recommend taking the lowest possible dose of steroids and advice against relying on them longer than necessary.

- Steroids' effectiveness often diminishes over time—meaning the longer a person takes a steroid, the less likely it is to relieve symptoms.
- In addition, people who take steroids continuously for several months or years can experience side effects such as weight gain, increases in blood pressure, diabetes, and heart disease.

224. Solomon is known **rheumatoid** arthritis patient for the last one year and unknown drug was given for him for the treatment of his **arthritis**. He finally developed **hypertension**, **hyperkalemia**, **hepatotoxicity**, **gingivalhyperplasia**, and **hirsutism**. Then what was the probable drug that Solomonwas taking?

A. Methotrexate
B. Cyclophosphamide
C. Cyclosporine
D. Azathioprine

- Common side effects of **cyclosporine** include: High blood pressure, increased hair growth,Swollen or inflamed gums, Numbness or tingling of the hands or feet,

225. The **daily** required volume of F-75 therapeutic feed for 5 years old children diagnosed with sever acute **malnutrition** in **phase**-I is approximately:

A. 75 ml/kg
B. 100 ml/kg
C. 130 ml/kg
D. 180 ml/kg

▪

226. Most recent and in-depth information about a health-related topic is

A. Primary
B. Tertiary
C. Secondary
D. Quaternary

▪

227. Which one is a good criterion of topic for drug information consult writing guide:

A. Topic of DI consult should be prepared in the form of statement rather than question form
B. Topic of DI consult needs to be minimum of two sentence long
C. Topic of DI consult must include the disease state for which the drug is used
D. Topic of DI consult should state only medication & appear at the bottom of consult paper

■

228. Among the following, one is **incorrect** about reference sources to prepare DI consult

A. DI specialist need to use at a minimum of four sources from the primary literature and the tertiary literature.
B. It is logical to use Tertiary literature when preparing introduction part and primary literature when writing the body of DI consult
C. Researches done using cross sectional study design are best source of information to prepare DI consult
D. Researches done using RCT study design are best source of information to prepare DI consult

- **Cross-sectional studies** are observational studies that analyze data from a population at a single point in time.
- They are often used to measure the prevalence of **health outcomes**, understand determinants of health, and describe features of a population.

229. DI documents including consult, newsletter can be better prepared under

A. Microsoft office ppt
B. Microsoft office word
C. Microsoft excels
D. Microsoft Publisher

A.

230. One of the following is considered as **best** source of information for pharmacist to **convince** physician during patient treatment.

A. Literature obtained from cross sectional study design
B. Literature obtained from RCT study design
C. Literature obtained from simple Google search
D. source obtained from old text books

Randomized controlled trials **(RCT)** are prospective studies that measure the effectiveness of a new intervention or treatment. Although no study is likely on its own to prove causality, randomization reduces bias and provides a rigorous tool to examine cause-effect relationships between an intervention and outcome.

231. One of the following is **true** about **newsletter** preparation and distribution except

A. Ensure readers get the DI newsletters on a regular cycle
B. New clinical trial researches can be newsletter topics
C. DI newsletter are usually prepared by using Microsoft word
D. Text documents, such as posters, can be easily posted on a website.

■

232. Which of the following is the **most frequentlate** side effect associate with **daunorubicin**?

A. Constipation
B. Renal toxicity

C. **Cardiotoxicity**

D. Hyperglycemia

- **Cardiotoxicity** is one of the most important adverse reactions of chemotherapy, leading to an important increase of morbidity and mortality.
- Cardiotoxicity can appear early or late in the course of the disease, and may vary from subclinical myocardial dysfunction to irreversible heart failure or even death
- **Daunorubicin**, also known as daunomycin, is a **chemotherapy** medication used to treat **cancer**. Specifically it is used for **acute myeloid leukemia** (AML), acute lymphocytic leukemia **(ALL),**chronic myelogenous leukemia (**CML**), and Kaposi's sarcoma.
- It is used by injection into a vein. A liposomal formulation known as liposomal daunorubicin also exists.
- **Common side effects** include hair loss, vomiting, bone marrow suppression, and inflammation of the inside of the mouth. Other severe side effects include heart disease and tissue death at the site of injection.

233. A patient is taking **three** different **laxative** products in an attempt to treat this constipation. Which **DTP** has this patient?

A. Needs additional drug therapy
B. Unnecessary drug therapy
C. Ineffective drug therapy
D. Adverse drug reaction

234. One of the following **hematologic** tests can **differ entiate microcyticnormochromicanemia** from microcytic hypochromic anemia

A. MCHC
B. MCH
C. MCV
D. Hgb

235. One of the following activities is under "assessment" of the patient care process

A. Identify drug therapy problems
B. Increasing dose for ineffective medication

C. Resolving drug therapy problems
D. Determining the actual outcomes of drug therapy

■

236. The **re-initiation** of anti-TB medication following the development of **hepatotoxicity** is in the order of

A. Z-E-H-R
B. R -H-Z-E
C. R-H-E-Z
D. H-R-Z-E

■

237. L.N., a 76-year-old, obese (92 kg, 180cm) man, was admitted to the hospital 3 days ago for management of recurrent angina. He was **started** on **nitroglycerin** sublingual tabs and confined to bed **rest** with gradual increases in his oral **anti angina** medications. On the third day of hospitalization, he noted **progressiveswelling** and **soreness** of the right calf. He **deniedshortness** of**Breath** (SOB), **cough**, or chest pain.

His medical history includes **coronaryarterydisease**, MI at ages 55 and 67, and **hypercholesterolemia**. His medications are **diltiazem** CD 360 mg/day PO, **isosorbidemononitrate** 120 mg/day PO, **atenolol** 50 mg/day PO, **aspirin** 325 mg/day PO, and **simvastatin** 5 mg PO Q pm. Initial laboratory values include Het, 36.5% (normal, 42%-52%); PT, 10.8 seconds (INR, 1.0); aPTT, 23.6 seconds (normal, 24-36); andplatelet count, 255,000/mm' (normal, 150,000-300,000). Duplex scanning reveals clot formation in L.N.'s right calf extending to the right thigh. He doesnot exhibit signs of PE.

Which statement is true about anti coagulation Therapy:

A. Heparin bolus dose of 5,000 units IV, to be followed by a continuousinfusion of 1,000 U/hour
B. Initial heparin loading doses of 70-100 U/kg followed by an infusion rate of 15-25 U/kg/hour
C. Warfarin should be initiated as soon as heparin is discontinued
D. Both heparin and warfarin will be continued for 3 months

■

238. M.M. is a 63-year-old woman who just finished 6 months of diet and exercise for **Dyslipidemia**. She has a history of **gout**, chronic non ischemic HF (LVEF 26%), **diet-controlled DM**, and **asthma**; she drinks 3 beers per day. No family history records are available. Her medications are **albuterol** metered dose inhaler, **Lisinopril**, and **furosemide**. Her vital signs include BP 124/80 mm Hg and HR 75 beats/minute. Her laboratory results are: HDL-C 64 mg/dL, LDL- C 101 mg/dL, TG 98 mg/dL, and **TC** 185 mg/dL.Her 10-year ASCVD risk is estimated to be 7.1%.

What is the most appropriate next step for M.M.?

A. Initiate moderate-intensity statin
B. Initiate high-intensity statin
C. Initiate low-intensity statin
D. Do not initiate statin therapy.

■

239. T.S., a 32-year-old **woman** with **hypertension**, has a **plan** to become **pregnant**. You, as a pharmacist, inform her that she will have to switch to another antihypertensive drug.

Which of the following drugs is absolutely contraindicated in pregnancy?

A. Hydrochlorothiazide
B. Amlodipine
C. Candesartan
D. Propranolol

- **Candesartan** is not recommended in pregnancy. It can reduce the level of fluid around your baby, particularly if you take it in the second and third trimesters of pregnancy. This can result in long term damage to your baby's kidneys and lungs and a number of other problems.
- There's no evidence to suggest that taking candesartan reduces fertility in either men or women

Questions 240-242 pertain to the following case Mr A.B. is a 67-year-**oldman** who was admitted to the **emergency** department of a private hospital in Addis complaining of increasing **shortness** of **breath**. He has become **weak** on each of the last two nights, struggling for **breath**. On arrival at hospital and on subsequent examination and review by the admitting physicians the following information is obtained. HPI: **shortness** of **breath** and **tiredness** at **rest** which is increasing over the last two months, swelling of ankles - pitting to the **knees**, weight of97 kg(usually 85 kg); Past medical history: **IHD** X 10 years, **MI** 1 year ago,**hypertension** X 10 years; **SH**: regular cigarette smoker (>30 per day) and

drinks approximately 35 units of alcohol per week; Med History: **Metoprolol** 25 mg daily, Aspirin 75 mg daily, Isosorbide mono nitrate 60mg daily; Labs: all are in normal range **except BUN** 50mg/dl, serum creatinine 1.9mg/dl A preliminary diagnosis of **acute heart** failure is made.

240. Which statement is **not correct** regarding AB's heart failure?

A. The clinical findings indicate that A.B. has both right-sided and left- sided heart failure
B. Based of severity, A.B. has NYHA class III heart failure
C. For acute management of the congestive symptoms, HCT is preferred over furosemide
D. A.B.'s weight should be monitored on a daily basis to ensure that excess fluid is removed.

- **Loop diuretics** remain the diuretic of choice for treating patients with heart failure.
- **Furosemide**, torsemide and bumetanide are the agents widely available for clinical use, with **furosemide** the predominant agent of the three.

241. If appropriately indicated, which pharmacological agent has **survival** benefit for A.B.?

A. Furosemide
B. Atenolol
C. Digoxin
D. Enalapril

- The study demonstrated a survival advantage with ACE inhibitor

therapy; treatment with **enalapril** was associated with a 28% reduction in the risk of death at two years compared with the vasodilator combination.

242. Which medication has **no** a **role** for the management of A.B.'s heart failure condition?

A. Propranolol
B. Carvedilol
C. Metoprolol
D. Bisoprolol

- Why is **propranolol** contraindicated in congestive cardiac failure? Furthermore, since the main effect of propranolol is to decrease heart rate, it is contraindicated in those who have bradycardia (less than 60 beats per minute).

Questions 243 & 244 pertain to the following case

Mr G.H., a 35-year-old **female** PhD student, comes to your pharmacy in quite a **distressed** state. She is totally **unkempt** and **smells** of body odors; her mood is **volatile** and she reports to you that she has **sensations** of **insect**

scrawlingunder **her** skin. Over the last few days, she has been **feeling** **sick**, and she is **absolutely** **convinced** that this is because her **neighbor** **somehow** put some poisons into her **diet**. She brings you some of her **vomit** to be analyzed, so that her concerns will now be **'demonstrated'** and she will be able to take **appropriate** action against her neighbor.

When you consult a physician, she was **diagnosed with** **psychosis**.

243. Which types of symptoms of G.H. are predominant?

A. Positive symptoms
B. Negative symptoms
C. Aggressive symptoms
D. Cognitive symptoms

- The **positive symptoms** include hallucinations, delusions, illogical changes in behavior or thoughts, hyperactivity, and thought disorder.
- The **negative** symptoms include apathy, lethargy, and withdrawal from social events or settings.

244. Which statement is **correct** regarding the proper management of G.H.?

A. Because of its lesser Extra pyramidal side effects, chlorpromazine is preferred over Clozapine.
B. Routine laboratory tests are critical in making the diagnosis of schizophrenia
C. Negative symptoms are better treated by atypical antipsychotics than the conventional
D. Galactorrhea is higher among atypical than conventional antipsychotics

- In general, atypical **antipsychotics** improve **negative** symptoms by about 25%, compared with 10 to 15% improvement with **conventional** agents.

Questions 245-247 pertain to the following case you are a community pharmacist working in Addis Ababa when Mr. G.S. comes in to see you. He is still **overweight** despite being on **optimal** exercise and **proper diet**. He was on a maximum dose of **glyburide** (20 mg daily). His HbAlc is 9.0% and on examination he has **neuropathy**

developing in **his feet**. He is also on **enalapril** 10 mg, **simvastatin** 40 mg and aspirin 75 mg daily. His blood pressure was **125/79** mmHg and his total **cholesterol** was **154** mg/dl (reading from three months ago). There is no micro albuminuria present.

245. Which of the following **concerns** you regarding this patient?

A. His diabetes is not controlled with glyburide
B. Target goal of blood pressure not achieved
C. As it is nephrotoxic, enalapril should be discontinued
D. Neuropathy associated with drug adverse effect

- Glibenclamide, also known as **glyburide**, is a medication used to treat type 2 diabetes.
- It is recommended that it be taken together with diet and exercise. It may be used with other anti diabetic medication.
- It is not recommended for use by itself in diabetes mellitus type 1.

246. Which oral anti-diabetic agent could have an **effect** to **reduce** the **weigh**t to G.S.?

A. Metformin
B. Insulin
C. Glibenclamide
D. Pioglitazone

- **Metformin** is an effective drug to reduce weight in a naturalistic outpatient setting in insulin sensitive and insulin resistant overweight and obese patients.

247. What should be the next step to manage G.S.?

A. add of NPH insulin
B. Addition of metformin
C. Addition of Glimepiride
D. Discontinue glyburide

- **Metformin** improves insulin resistance, and is recommended as the first choice medication for newly diagnosed type 2 diabetes patients by most guidelines.
- **Glimepiride** is a third generation sulfonylurea that stimulates insulin secretion.

Questions 248 & 249 pertain to the following case Mrs. Zinash, a 30-year-**old pregnant** woman presents to your pharmacy with a **new prescription** for **cephalexin** 500 mg **three** times a **day** for **one week**. She is worried about possible effects on the developing baby. Last week she was told that her pregnancy is on **9-week** gestational age.

248. the most important **causative agent of UTI**, like in the case of Zinash, is:

A. H. pylori
B. S. aureus
C. E.coli
D. P. aeruginosa

- Among bacteria causing UTIS, **E. coli** is considered as the most predominant cause of both community and nosocomial UTIs.
- Antibiotics commonly recommended for treatment of UTIs

249. Which antibiotic could be an **alternative** for cephalexin to treat Zinash's UTI?

A. Nitrofurantoin
B. Ciprofloxacin
C. Cotrimoxazole
D. Co-amoxiclav

- Many experts support using **ciprofloxacin** as an alternative for urinary tract infection and, in some cases, as the preferred first-line agent.

250. An 8-yr-old boy with **newly** diagnosed **nephrotic** syndrome enters remission 7 days after beginning treatment with high-dose **prednisone** therapy (30 mg PO bid). The most appropriate next step in therapy is to:

A. Discontinue prednisone and monitor closely for relapse
B. Continue high-dose prednisone therapy for a total of 4-6 week
C. Change to alternate-day prednisone dosing for the next 2 months
D. Add cyclophosphamide therapy

- **Nephroticsyndrome** is a condition where the kidneys leak protein from the blood into the urine.
- When it is untreated, children can often die from infections.
- Most children, with nephrotic syndrome, respond to corticosteroid drugs (**prednisone**, **prednisolone**) reducing the risk of serious infection.

Questions 251 & 252 pertain to the following case Mrs. D.F., a 59-year-**oldwoman**, was **referred** to the **oncology** clinic at Tikur Anbessa Specialized Hospital by her general practitioner after presenting with a self-**detected lump** in her **left breast**. **Following** an **ultrasound**, fine needle biopsy and mammogram she underwent a **lumpectomy** and wide local excision. She was diagnosed with breast cancer. Her tumor was found to be **26 mm**, mixed invasive ductal and infiltrating **lobular carcinoma** which was **estrogen-receptor** and **progestogen-receptor positive**, and also**HER2 positive.** Three axillary **lymph nodes** were **involved** but there were **no distant metastases.** There was no family history of breast cancer. Mrs. D.F.'s father had been diagnosed with **prostate cancer** aged 72, but was still alive and well. She began **menses** at age of **10 years**. She had never smoked,

and drank taking hormone approximately four units of alcohol per week. Mrs. D.F. was replacement therapy (HRT), as she **was post-menopausal**. Her treatment plan was to receive adjuvant (5-fluorouracil, epirubicin, and cyclophosphamide) chemotherapy for **four** cycles, followed by four cycles of adjuvant **docetaxel** chemotherapy. Adjuvant **trastuzumab** chemotherapy was to be given concurrently with the docetaxel chemotherapy. The chemotherapy treatment was to be followed by **local radiotherapy** and hormonal therapy with anastrozole 1 mg orally daily. Mrs D.F. attended the chemotherapy day unit for **cycle 1** of FEC75 chemotherapy. Her weight was 79 kg, her height 1.72 m, and her body surface area 1.94 m2. Her chemotherapy was prescribed as follows:

FEC75 chemotherapy every 3 weeks: 5-fluorouracil 600 mg/m2 = 1164 mg intravenous bolus day 1, Epirubicin 75 mg/m2 = 146 mg IV bolusday 1, Cyclophosphamide 600 mg/m2 = 1164 mg IV bolus day 1

251. Which situation is **not associated** with increased risk of breast cancer?

A. Early menarche
B. Taking HRT
C. Late on first child
D. Early pregnancy

- Women who have their first full-term pregnancy at an early age have a decreased risk of developing breast cancer later in life.

252. The order of therapeutic management of **breast** as in the case of D.F. is:

A. Surgery → Neoadjuvant therapy → adjuvant chemotherapy→ radiation
B. Neoadjuvant therapy→ Surgery → adjuvant chemotherapy →radiation
C. Radiation →Surgery →Neoadjuvant therapy → adjuvant chemotherapy
D. Radiation → Surgery → adjuvant chemotherapy →Neoadjuvanttherapy

- Neoadjuvant chemotherapy is delivered before surgery with the goal of shrinking a tumor or stopping the spread of cancer to make

surgery less invasive and more effective.

- Adjuvant chemotherapy is administered after surgery to kill any remaining cancer cells with the goal of reducing the chances of recurrence.

253. **True** regarding gastric ulcer (GU) versus duodenal ulcer (DU)

A. H. pylori infection more commonly results GU whereas NSAIDs cause DU
B. Pain from a GU is usually relieved by food intake
C. Pain associated with DU occurs during the fasting state or at night
D. Malignancy is more commonly found with DU than GU

- Duodenal ulcers tend to cause consistent pain. A patient may feel no pain when he or she awakens, but by midmorning it is present.
- The pain can be relieved by eating, but it usually returns two to three hours later.
- Pain that wakes a patient at night is common for duodenal ulcers.

254. Which NSAID has the **least risk** of PUD than the others?

A. Indomethacin
B. Piroxicam
C. Ibuprofen
D. Naproxen

- The relative risk of upper gastrointestinal complications for **aceclofenac**, **celecoxib** and **ibuprofen** is low (<2).
- **Diclofenac**, **meloxicam** and **ketoprofen** are **intermediate**(2–4) while naproxen, **indomethacin** and diflunisal have a **higher** relative risk (4–5).

255. What is the most appropriate place in **therapy** for long-acting **beta-agonists** in **chronic** **asthma** management?

A. As monotherapy
B. As rescue therapy
C. In combination with ICSS
D. In combination with cromolyn

- The addition of an inhaled long-acting β2-agonist (LABA) to an

inhaled corticosteroid (ICS) gives optimal control of asthma in most patients and two fixed combination inhalers (salmeterol/fluticasone and for moterol/budesonide) are increasingly used as a convenient controller in patients with persistent asthma.

Questions 256 & 257 pertain to the following case Ms T.T., a 20-year-**oldwoman**, is admitted to the hospital in **acute respiratory distress**. She states that she has been **using** her boyfriend's **Albuterol inhaler** on a regular basis for the past two years. During the past few months, she has been using the inhaler throughout the day on a daily basis and sometimes at night.

256. Which one of the following asthma severity she is in?

A. Mild intermittent
B. Mild persistent
C. Moderate persistent
D. Sever persistent

- Severe, persistent asthma involves symptoms that persist

throughout the **day** and **night**.

- Asthma may get in the way of daily activities and make it difficult to sleep — nighttime symptoms often arise in people with severe asthma.

257. Which one of the following is the best maintenance drug for T.T's asthma?

A. Fluticasone low dose inhalation
B. Salmeterol
C. Fluticasone high dose plus Salmeterol
D. Theophylline

- The combination of **fluticasone** and **Salmeterol** is used to treat difficulty breathing, wheezing, and shortness of breath, coughing, and chest tightness caused by asthma.
- The combination of fluticasone and Salmeterol is also used to prevent and treat wheezing, shortness of breath, coughing, and chest tightness caused by chronic obstructive pulmonary disease (COPD)

258. Mr D.F., a 62-year-**old**-**man**, was admitted to hospital after **collapsing** and experiencing a brief **loss**

of **consciousness** 12 hours earlier. On admission he was **fully conscious**. He had **lost voluntary** movement in **both his left arm and leg**. His blood pressure was **160/100 mmHg**.

His previous medical history included **hypertension**, for which he had been prescribed **hydrochlorothiazide12.5** mg daily for 6 years.

He had also been on **carbamazepine** 400 mg twice a day for 10 years for **epilepsy**.

He lived at home with his wife, and smoked 15 cigarettes per day and occasionally drank alcohol.

His serum biochemistry results were: Na-137 mEq/L (normal: 135-145); K=4.9mEq/L (normal: 3.5-5.0); Urea-15 mg/dL; Creatinine= 0.9 mg/dl c. A computed tomography (CT) scan was ordered and reviewed.

A diagnosis of **ischemic stroke** was made.

Which statement is **false** regarding D, F.'s stroke management?

A. Mr. D.F. is a candidate for thrombolytic therapy

B. Heparin 5000 units SQ is recommended for DVT prophylaxis

C. Aspirin should be started within 48 hours of onset
D. CT scans or MRI Scans to differentiate the type of stroke

-

259. Which statement is **correct** regarding **gout**:

A. Gout attacks are usually poly articular
B. Allopurinol is indicated to manage acute attack of gout
C. Gout affects men more often than women
D. Aspirin is indicated lo relive gout associated pain

- Gout is a common form of inflammatory arthritis that is very painful. It usually affects one joint at a time (often the big toe joint).
- Allopurinol works by reducing the amount of uric acid made by body cells. In gout, this helps prevent uric acid crystals building up in the joints. This helps prevent joints becoming swollen and painful.

260. A 25-year-**oldwoman** has a long history of **inflated** self-esteem **grandiosity**, talking so fast. Her attention shifts between many topics. She also undertakes things without concern. She is prescribed with **Lithium** 300 mg daily. Which laboratory tests should be monitored for this woman?

A. Renal function test and liver function test
B. Liver function test and thyroid function test
C. Renal function test and thyroid function test
D. Liver function test and cardiac function test

- Grandiosity is more of a feeling of being superior to others, or inflated self-esteem.
- Conversely, delusions of grandeur are false beliefs or delusions of superiority not based in reality, such as someone believing that they have found the cure for a major disease.
- The kidneys are responsible for 95% of lithium excretion, and the rest is removed through sweat and feces.
- The kidneys treat lithium and sodium similarly which is the reason sodium depletion can significantly elevate lithium re absorption.

261. In the management of DKA which one is **not** recommended?

A. Fluid resuscitation
B. Management of hypokalemia
C. Insulin administration
D. Rapid reduction of serum osmolality

- Diabetic ketoacidosis (DKA) is a potentially life-threatening complication of diabetes mellitus.
- The main aims in the treatment of diabetic ketoacidosis are replacing the lost fluids and electrolytes while suppressing the high blood sugars and ketone production with insulin.
- Admission to an intensive care unit (ICU) or similar high-dependency area or ward for close observation may be necessary.

262. In the management of Type 2 DM, **euvolemia** should be ensured before the administration of

A. GLP-1 analogues
B. DPP-4 inhibitors
C. SGLT-2 inhibitors
D. TZDs

- **Euvolemia** is the state of normal body fluid volume, including

blood volume, interstitial fluid volume, and intracellular fluid volume; hypovolemia and hypervolemia are imbalances.

- **SGLT2inhibitors**, also called **gliflozins**, are a class of medications that alter essential physiology of the nephron; unlike **SGLT1** inhibitors that modulate sodium/glucose channels in the intestinal mucosa.
- **Sodium-glucose cotransporter-2** (**SGLT2**) inhibitors induce osmotic diuresis by inhibiting the proximal renal tubular reabsorption of the filtered glucose load.
- This can occasionally lead to severe dehydration, hypotension and in some cases, severe hyponatremia
- The **gliflozins**are used to treat type 2 diabetes mellitus but are most often used as second- or third-line agents instead of first-line because there are other medications on the market that have much longer safety record and are less expensive than gliflozins.

263. **Testosterone** is indicated in the management of **erectile dysfunction** associated with.

A. Hypogonadism
B. Spinal cord injury
C. Type 2 DM
D. Hypertension

- **Male hypogonadism** usually is treated with **testosterone** replacement to return testosterone levels to normal.
- **Testosterone** can help counter the signs and symptoms of male hypogonadism, such as decreased sexual desire, decreased Energy, decreased facial and body hair, and loss of muscle mass and bone density.

264. Which of the **phosphodiesterase** inhibitors is called **weekend** drug?

A. Sildenafil
B. Vardenafil
C. Tadalafil
D. Avanafil

- A **phosphodiesterase** inhibitor is a drug that blocks one or more of the five subtypes of the enzyme phosphodiesterase (PDE),
- **Tadalafil**, which is available as a generic drug and as Cialis, is a long-lasting PDE5 inhibitor that was approved by the FDA in 2003. It's referred to as the **"weekend pill"** due to the fact that it can provide relief from erectile dysfunction for up to 36 hours per dose.

265. A 36, **pregnant woman** with severe **acne** consults you regarding the **choice of** treatments. Which **antibiotic** do you recommend for this woman?

A. Doxycycline 100 mg daily
B. Tetracycline 500 mg
C. Erythromycin 500 mg twice daily
D. Isotretinoin 10 mg once daily

- **Acne**, also known as acne vulgaris, is a long-term skin disease that occurs when dead skin cells and oil from the skin clog hair follicles.
- **Erythromycin** is generally considered safe during any stage of pregnancy when administered for a few weeks. It may be considered the antibiotic of choice for treatment of severe inflammatory acne in pregnant women. However, long-term use of the drug (>6 weeks) has not been studied.

266. You are evaluating Mr. Bekele for his **BPH** management with the physician the patient is taking another **anti-hypertensive** agent. Which of the following **alpha antagonist** is preferred for Mr. Bekele being at risk of developing **hypotension**?

A. Doxazocin

B. Tamsulosin

C. Prazosin

D. Terazosin

- **Alphablockers** can treat a small range of diseases such as hypertension, Raynaud's disease, benign prostatic hyperplasia (BPH) and erectile dysfunction.
- Selective α1-adrenergic receptor antagonists include:
- Alfuzosin
- Doxazosin
- Prazosin (inverse agonist)
- Tamsulosin
- Terazosin
- Silodosin
- The **α-blocker** Tamsulosin relieves lower urinary tract symptoms caused by benign prostatic hyperplasia (BPH) by relaxing per urethral smooth muscle.
- However, **α-blockers** also can lower vascular resistance and potentially cause hypotension.

267. What **precautions** do you recommend for a **female pregnant** pharmacist while dispensing **finasteride** tablets?

A. To avoid exposure of sun light
B. To wear gloves while counting tablets
C. To wash hands after dispensing tablets
D. To apply antiseptics after dispensing

- **finasteride** Drug class (5α-Reductase inhibitor)
- Finasteride is a known teratogen that can be absorbed through the skin, so pregnant or potentially pregnant women must handle this medication with EXTREME CAUTION.
- Gloves should be worn when handling the medication.

268. The most important cause of DKA is

A. Infection
B. New onset DM
C. Insulin omission
D. Myocardial infarction

- **DKA** develops when your body doesn't have enough insulin to allow blood sugar into your cells for use as energy.

269. Which of the following are **true** about the design of **chemotherapy** regimens?

A. They are always designed with a cure in mind.
B. Monotherapy is the standard of care for most types of cancer
C. Combining drugs with different mechanism of action is recommended
D. Combining drugs with concomitant side effects is recommended

270. Which one of the following **women** is **less** at **risk** for breast cancer?

A. A 39 years old woman who started menstruation at the age of 11
B. A 25 years old woman who had her first pregnancy at the age of 16
C. A 56 years old woman who went through menopause at the age 55
D. A 50 years old menopause woman getting hormone replacement therapy

271. **African Americans** are more **affected** by **prostate cancer** than **Japanese** males. The most established reason for this difference is:

A. African Americans have higher testosterone than the Japanese

B. Smoking is more prevalent among African Americans than Japanese

C. African Americans have more industrial exposures than Japanese

D. African Americans have lower aromatase enzyme than the Japanese

272. Which **treatment recommendation** is appropriate in the following **acute bacterial meningitis** cases?

A. A 3-week child diagnosed with bacterial meningitis Ampicillin + Cefotaxime

B. A 75 years old elderly diagnosed with bacterial meningitis→ceftriaxone + Vancomycin

C. A 20 years old male patient diagnosed with bacterial meningitis after penetrating head trauma Ampicillin + Ceftriaxone

D. A 40 years old immune compromised woman patient diagnosed with bacterial meningitis →Vancomycin + Ampicillin

- Antibiotic used to treat meningitis in children-initial antimicrobial treatment consists of ampicillin plus an aminoglycoside **(ampicillin plus Cefotaxime is also appropriate)**.
- If S pneumonia is suspected, vancomycin should be added.

273. A 27 years old **young women** (50 KG) was diagnosed with **sever** complicated **P. falciparum malaria**. She was prescribed with 2.4 mg/kg **artesunate** injection **IM** given on admission (time=0), then at 12h and 24h,then daily for up to five days. **Artesunate** is available **60mg** powder within a **7 ml glass vial**. How many vials do you need for the complete treatment of this patient?

A. 2 vials
B. 7 vials
C. 5 vials
D. 14 vials

274. True about the **five types** of viral hepatitis

A. Chronic hepatitis is associated with only hepatitis A and E virus
B. All the five types of viral hepatitis are DNA virus except HBV
C. Currently vaccine is available only for HAV and HBV
D. fecal-oral route is the main means of transmission for HBV and HCV

- The virus, which is called hepatitis B virus (HBV), can cause lifelong infection, cirrhosis (scarring) of the liver, liver cancer, liver failure, and death. Hepatitis B vaccine is available for all age groups.

275. Mrs. **Amina** is 34 years old married **woman**. She was a known **RVI** patient and she was taking AZT/3TC/EFV for the last 5 years. While she was tested for her routine monitoring, she was found to be **infected** with **HBV**. How do you approach this woman for proper management?

A. The dose of lamivudine should be corrected to 100 mg
B. ART regimen should be changed to TDF/3TC/DTG
C. She needs to stop ART regimen to consider herbal medicines
D. HBV vaccination is adequate to stop the progression of HBV

■

276. A **community pharmacy** sent a compliant to manufacturer **Z** on its product which was an oral emulsion. The complaint was about **breaking** of the product exhibited by a **complete separation** of the **phases**. What should be the action taken by the manufacturer after receiving the complaint?

A. Immediate recall action should be taken by the manufacturer since the defect is critical
B. Recall the product from the market if the documentation-based investigation of the previous

batches of the product indicated that similar complaint has been occurred

C. Recall the product from the market immediately if the laboratory analysis of complaint samples showed the defect

D. None of the above

▪

277. Mr. Kebede is a **pharmacist** working in a hospital **dermatological** compounding unit. He was supposed to recommend the appropriate **semisolid** preparation for application on patient's **skin** that was **dry** & **scaly**. Which of the following preparations is recommended:

A. Gel

B. Ointment

C. Paste

D. Cream

- Choosing the right topical product can depend on your skin type, as well as how much water and oil the product contains.
- **Ointments** contain the most oil, making them the best choice for

extremely dry, cracked skin. Creams have some oil, while lotions and gels contain more water.

278. What kind of orally administered drugs **cannot** permeate easily the membranes by **passive diffusion** in its way to the systemic circulation?

A. Lipid-soluble substances
B. Non-ionized substances
C. Hydrophobic substances
D. None of the above

- Larger uncharged polar molecules such as glucose are unable to cross the plasma membrane by passive diffusion, as are charged molecules of any size (including small ions such as H+, Na+, K+, and Cl-).

279. A surfactant with a Hydrophilic Loophilic Balance (HLB) value of 18 is expected to function as a:

A. Anti-foaming agent
B. Water in oil (w/o) emulsifier
C. Oil in water (w/o) emulsifier

D. Solubility enhancer

- The HLB number is defined as the ratio of hydrophile group to lipophile group, which essentially indicates whether a surfactant will promote water-in-oil or oil-in-water emulsion.
- Biosurfactants with HLB values less than 6 are lipophilic and favors stabilization of water-in-oil emulsification.
- Hydrophilic–lipophilic balance (HLB) is the balance of the size and strength of the hydrophilic and lipophilic moieties of a surfactant molecule.
- **The HLB scale ranges from 0 to 20. In the range of 3.5 to 6.0, surfactants are more suitable for use in W/O emulsions**.

280. One of the following **devices** is used to **increase** the **efficiency** of drug delivery via pharmaceutical **aerosols**?

A. Tube spacers
B. Dip tube
C. Actuator
D. Pressure valve

- **Spacers** are empty tubes that are usually made from plastic.
- They slot onto the mouthpiece of your inhaler on one end, and

you use a mouthpiece or mask on the spacer at the other end.

- They help you get the best from your asthma medicine if you use a metered dose inhaler (MDI)

281. The following prescription was sent to the pharmacy compounding unit:

Rx

Castor oil 15 ml

Water up to 60 ml

Make an emulsion

What kind of incompatibility is observed in the prescription if compounding is done as prescribed?

A. Physical incompatibility

B. Chemical incompatibility

C. Therapeutic incompatibility

D. No incompatibility is observed

- Immiscibility: Oil and water are immiscible with each other. They can be made miscible with water by emulsification
- Make an emulsion. In this prescription castor oil is immiscible with water.

- To overcome this incompatibility an emulsifying agent is used to make a good emulsion

282. A given tablet has remained in storage for 2 years since manufacture. From the drug monograph the decomposition rate constant (k) was found to be 6 x 102 year. The degradation reaction is known to proceed via **first-order kinetics**. Which one of the following is the remaining percentage of the original drug concentration?

A. 94
B. 83
C. 89
D. 78

-

283. Drug Z is known to be **vulnerable** for oxidation chemical degradation. A prescription comes to the compounding unit containing this drug to be prepared in **ointment** form. Which one of the following

strategies **would not normally** be expected to reduce the rate of oxidation of the drug?

A. Incorporation of antioxidants in the preparation
B. Store the compounded product under reduced temperature
C. Addition of a heavy metal to the formulation
D. Protecting the formulation from light during compounding

- All metals, with the exception of the precious metals, will oxidize when exposed to oxygen and an electrolyte.

284. **Zeta potential measurement** is among the evaluation parameter of the pharmaceutical suspension. Which property of this liquid preparation is determined from this measurement?

A. Viscosity
B. Stability
C. Solubility
D. Particle size

- The magnitude of the **zeta potential** gives an indication of the

potential stability of the colloidal system.

- If all the particles in suspension have a large negative or positive zeta potential then they will tend to repel each other and there will be no tendency for the particles to come together.

285. The procedure which is used to prove that the various production **procedures** and materials will produce **accurate results** is known as:

A. GMP
B. Quality Control
C. Quality assurance
D. Validation

- Validation and verification of measurement methods are procedures that aim to establish realistic expectations with the analyst and con-fidence with the end-user that the methods are fit for their intended purposes.

286. 12-day-**old new born** baby was admitted to **pediatrics** emergency ward of St. Paul hospital with symptoms of **high-grade fever** and **inability to suck**. The pediatrician assessment revealed the presence of

bacterial pneumonia. As part of the clinical team, you are asked to recommend an appropriate treatment.

What is the most appropriate **first line regimen**?

A. Amoxicillin + Gentamicin
B. Ampicillin+ Gentamicin
C. Amoxicillin + clavulanic acid
D. Vancomycin + Gentamicin

- Ampicillin and gentamicin are usually effective against all the bacterial agents causing community-acquired sepsis in neonates as this combination has traditionally been considered to have activity against both Gram-positive and Gram-negative organisms in the neonatal period.

287. A 25-year-**old pregnant** woman who is in **second-trimester pregnancy** came to the clinic with complaint of **urinary frequency**, urgency and burning sensation on urination. She has no known drug allergies. Urine analysis shows many **gram-negative bacteria**. The physician prescribed her **Ciprofloxacin** suspecting **lower urinary tract infection**.

What is the pharmacist's best recommendation for this patient?

A. Change Ciprofloxacin to Cotrimoxazolc
B. Change Ciprofloxacin to cephalexin
C. Change Ciprofloxacin to Ceftriaxone
D. No need of changing Ciprofloxacin

- Fluoroquinolone antibiotics like **ciprofloxacin** and **levofloxacin** might be used for UTIs **when you aren't pregnant**.
- But they aren't often used during pregnancy because they have a risk of causing birth defects.
- Some studies have reported that these risks are low because the medications are only taken for a few days.

288. You are a **consultant** for a **long-term** care skilled nursing facility. During one of your visits, you are approached by one of the local internists. He is caring for LK, an 80-year-**old man** who has developed secondarily **generalized tonic- colonic seizures** after suffering a stroke. This patient has a history of **depression**, for which he is currently receiving **amitriptyline** (Elavil). The physician wants to start an **antiepileptic** drug but is worried about causing any

Pharmaco kinetics drug interactions.

Which of the following medication options is **least** likely to cause a **drug-drug** interaction?

A. Carbamazepine
B. Lamotrigine
C. Phenytoin
D. Gabapentin

- **Gabapentin**, sold under the brand name Neurontin among others, is an anticonvulsant medication used to treat partial seizures, neuropathic pain, hot flashes, and restless legs syndrome.
- In general, some studies have shown that **Gabapentin** is an **antiepileptic** drug with a low profile of interaction with other drugs.

289. A 70-year-old **patient** was just diagnosed with **Parkinson's** disease and was placed on **carbidopa/L-dopa** 10/100 **three** times a day by his **primary** care **physician**. The patient has been complaining of nausea and **stomach upset as** well as light headness since

starting the medication and wants to stop the medication. The best recommendation is to

A. stay on the medicine and the side effects will go away
B. change to carbidopa/L-dopa 25/100 three times a day
C. Change to pramipexole 0.5 mg three times a day.
D. stop the medication and never take it again

■

290. A 40-year-**old female** patient who is diagnosed with **schizophrenia** has a problem of poor adherence to his medication and follow up, the physician prescribed him **Haloperidol 50mg** in the form of **depot** preparation. The patient is also advised to come after five weeks to refill his next dose what potential drug therapy problem will **encounter** this patient?

A. Dosage of Haloperidol is too high
B. Haloperidol depot is ineffective
C. Depot formulation is not indicated

D. There is no potential drug therapy problem

- A depot injection is a slow-release form of medication.
- The injection uses a liquid that releases the medication slowly, so it lasts a lot longer.
- Depot injections can be used for various types of drug, including some antipsychotics.

291. A 30-years-old **male schizophrenia** patient has been taking **Haloperidol 10mg** PO for the **last three** weeks. On return for follow-up at **psychiatry clinic**, his mother reported that he has sustained **abnormal postures**, tongue protrusion, **spasm** of the **jaw** and **torsion** of **neck** and **eyes rolling back into head**. As a clinical pharmacy service provider, you suspected drug induced **adverse effect** from the current regimen.

What potential type of **adverse effect** you may suspect in this patient?

A. Pseudo-parkinsonism

B. Dystonia

C. Tardive dyskinesia

- **Dystonia** is a neurological hyperkinetic movement disorder syndrome in which sustained or repetitive muscle contractions result in twisting and repetitive movements or abnormal fixed postures. The movements may resemble a tremor.
- **Dystonia** is often intensified or exacerbated by physical activity, and symptoms may progress into adjacent muscles.
- **Akathisia** is a movement disorder characterized by a feeling of inner restlessness accompanied by mental distress and an inability to stay still. Usually, the legs are most prominently affected.

292. A 65-year-**old female** patient was on follow up for Major **Depressive Disorder** at psychiatry clinic. She has been taking **fluoxetine** 20mg per day for the last one month. Few days after taking the medication, she came back to a clinic with a chief compliant of difficulty in **falling sleep** and the asks your recommendation. What is the most appropriate intervention for her complaint?

A. Change the medication

B. Recommend diazepam
C. Take the medicine in the morning
D. Decrease the dose of medication

293. A 70-year-old nursing-home resident with newly diagnosed **Parkinson's disease** and a history of **prolonged confusion** after **hip surgery** is best treated with

A. Bromocriptine
B. Benztropine
C. Ropinirole
D.carbidopa/L-dopa.

- Carbidopa and levodopa combination is used to treat Parkinson's disease, sometimes called shaking palsy or paralysis agitans.
- Parkinson's disease is a disorder of the central nervous system (brain and spinal cord).

294. An 18-year-**old female epileptic** patient come to neurology clinic for follow up. She has been taking

Carbamazepine 200mg PO TID and **Valproate** 200mg PO TID for the last six years. The epilepsy is adequately controlled and she has not encountered any seizure attacks for 4 years. The neurologist is evaluating her to stop the medications.

What is the most appropriate way of stopping her medications?

A. Stop both medications on the current follow up.
B. Tapering and then stopping both medication at the same time
C. Tapering one medication first then the next medication finally stop both
D. Stop carbamazepine first and the Valproate without tapering

295. CB is a 28-year-**old woman** with **epilepsy** that is currently well controlled with valproic acid. She is interested in becoming **pregnant for the first time and** asks you for advice **about epilepsy medication** management **during her pregnancy**. She wants to

know if **valproic** acid **is safe during pregnancy**. She has no other medical problems, has no allergies, and does not drink or smoke.

What would be the appropriate recommendation for this patient?

A. To add Lamotrigine to her regimen
B. To decrease dose of sodium Valproate
C. **To change sodium Valproate to Lamotrigin**e
D. To continue sodium valproate during pregnancy

- **Lamotrigine** may be taken during pregnancy if it's needed to keep you well.
- Do not stop taking lamotrigine if you become pregnant.

296. A 35 years old **female** patient has a **chronic migraine** with a **daily episode** of acute attack and the patient was using OTC Ibuprofen for her acute episode management but recently it doesn't give her a relief.

What is the most appropriate recommendation at this time?

A. Recommend Sumatriptan 50mg for acute management
B. She is a candidate for migraine prophylaxis
C. Recommend diclofenac 50mg
D.A and B

- **Sumatriptan**, sold under the brand name Imitrex among others, is a medication used to treat migraine headaches and cluster headaches.

297. A 20-year-**old boy** has been taking anti-**epileptic** medication for the treatment of **generalized tonic-colonic seizures** that he had developed a year ago. After starting anti-epileptic medication, he exhibited moderate **hyponatremia**.

Which anti-epileptic medication was responsible **for this side effect**?

A. Carbamazepine
B. Lamotrigine
C. Phenobarbital

D.Phenytoin

- **Phenytoin** (PHT), sold under the brand name Dilantin among others, is an anti-seizure medication.
- It is useful for the **prevention of tonic-clonic seizures** and focal seizures, but not absence seizures.
- The intravenous form, fosphenytoin, is used for status epileptic us that does not improve with benzodiazepines.
- **Phenytoin** has been shown to inhibit the release of ant diuretic hormones and has been thought not to induce hyponatremia. However, we found an increased risk of hyponatremia in patients using phenytoin.

298. A 74-year-**old man** with a history of **Valvular** heart disease came to an emergency department with complaint of **shortness of breath**. Physical examination confirms findings consistent with **acute heart failure**. His extremities are warm, and blood pressure is 110/78 mmHg with **a heart rate of 85** beats per minutes. His laboratory studies return with **sodium** of 125mEq/L and **creatinine** of **2.8 mg**/dL (which was normal before admission).Chest x-ray shows a diffuse alveolar filling pattern consistent with **pulmonary edema**.

What is the most appropriate drug therapy for this patient?

A. Administer furosemide 40mg IV

B. Administer digoxin250mcg IV

C. Initiate Metoprolol 25mg PO daily

D. Start dobutamine 5mcg/kg/min

- Depending on the severity of the condition and the reason for the **pulmonary edema**, treatment might include one or more of the following medications: Diuretics. Diuretics, such as **furosemide** (Lasix), decrease the pressure caused by excess fluid in the heart and lungs.

299. A 48-year-**old male** patient with **chronic kidney disease (CKD**) for the past eight months visited a hospital. **Currently** the BP of the patient is **150/90mmHg**. The clinician wants to start **antihypertensive** medication that has been shown to slow progression of CKD.

Which drug is the most appropriate to be initiated in this patient?

A. Amlodipine

B. Hydrochlorothiazide

C. Enalapril

D. Metoprolol

- **Enalapril** is used to treat hypertension, symptomatic heart failure, and asymptomatic left ventricular dysfunction.
- It has been proven to protect the function of the kidneys in hypertension, heart failure, and diabetes, and may be used in the absence of hypertension for its kidney protective effects.
- It **is widely used in chronic kidney failure**.

300. A 65 years **old male** patient with advanced **prostate cancer** was admitted to the medical ward of TASH and the patient was complaining of severe pain and was immobile. The patient was given **Morphine** 10 mg every 4 hours PRN.

Which of the following **True about** the management of this patient's pain?

A. It is wrong to prescribe morphine for this patient

B. lactulose 30 ml daily should be started as a prophylaxis for opoid induced constipation

C. The patient doesn't need prophylaxis for constipation

D. The patient should be given metoclopramide 10mg

po for nauseas a prophylaxis

- **Lactulose** is Lactulose is a **non-absorbable sugar** used in the treatment of chronic **constipation** in patients of all ages as a long-term treatment.

301.A 58-year-old **woman** came to a hospital with complaints of **dyspnea** on **exertion** and **palpitations** for the last 3 weeks. Cardiac examination reveals an irregularly **irregular rhythm**; 3.5 cm **distended jugular veins**,and,grade **pitting edema**. The **electrocardiogram** finding **shows atrial fibrillation**. An echocardiogram result reveals a **left ventricular ejection fraction of 35%.** The patients started on **Furosemide**, **Enalapril**, **Digoxin**, and **Aspirin**. On her next follow-up, she **reported that** she **developed hazy vision** and difficulties in both reading and **red-green color perception.**

What drug is the mostly **responsible** for her **visual** disturbances?

A. Furosemide

B. Digoxin

C. Enalapril

D. Aspirin

- **Digoxin**, an **Na+/K+ ATPase inhibitor**, is widely used for the treatment of congestive heart failure.
- It is well known that digoxin can produce alterations in the **visual system of patients**, such as reduced visual acuity, photophobia, and blurred or yellow vision.

302. A 73-year-old **female** patient was **diagnosed** with **stage C heart failure** and an **ejection fraction of 25%,** is currently taking **Lisinopril** 20 mg daily, **furosemide** 40 mg twice daily, **digoxin** 0.125 mg daily, and **carvedilol** 3.125 mg twice daily. **Today**, she **reported increased shortness** of **breath**, **fatigue**, and **ankle swelling**. She **also reports** a 10 kg **weight gain**, over the past week. **The lab values** are significant for serum potassium, of 5.2 mEq/L (5.2 mmol/L) and serum creatinine of 2.2mgldL (194 mic-mol/L).

What is the most appropriate **initial intervention** for this patient?

A. Increase dose of Lisinopril to 20 mg twice daily
B. Add Spironolactone 25 mg daily
C. increase dose of furosemide to 80 mg twice daily
D. Increase dose of digoxin to 0.25

■

303. A 60-year-old **female** patient was admitted with the **diagnosis** of **deep vein thrombosis** (DVT). One year back, she was admitted for **same diagnosis** and treated. In her previous admission. She had a history of **heparin induced thrombocytopenia**. Laboratory investigation includes **Hemoglobin**: **11.5**, **Hematocrit**: **34%, platelet 420**,**000**. Her current normalization (INR) is 1.5. Other lab values are within the normal range.

What is the appropriate **intervention** for this patient?

A. Start Warfarin with a target INR of 2 to 3
B. start un-fractionated heparin, since the patient has good platelet count
C. Start direct thrombin inhibitor with dabigatran
D. Start dalteparin with a target PTT of 60 to 80

- In healthy people an INR of 1.1 or below is considered normal. An INR range of **2.0 to 3.0 is generally** an effective therapeutic range for people taking **Warfarin** for certain disorders.
- These disorders include atrial fibrillation or a blood clot in the leg or lung.

304. A 65-year-old **woman** weighing 57kg, was admitted to a private hospital. She had been **treated for chronic heart failure** for four years and had a history of **atrial fibrillation and hypertension**. Now she has been **referred to hospital** with suspected deterioration in her condition. She reported **episodes** of **discomfort** in the **chest**, which she described as **palpitations**, rather than **tightness or pain**. Her medication on admission was: **Hydrochlorothiazide** 25 mg daily, **Furosemide** 40 mg daily, **Enalapril** 10 mg daily, **Digoxin** 0.125 mg daily, **Atorvastatin**- 40 mg at night, **Warfarin** 5 mg daily.

What **additional** drug do you recommend for this patient?

A. Nifedipine 20 mg daily
B. Candesartan 4 mg daily.
C. Metoprolol 50 mg daily

D. Isosorbide-dinitrate 20 mg TID daily

- Metoprolol is used alone or together with other medicines to treat high blood pressure (hypertension).
- High blood pressure adds to the workload of the heart and arteries.

305. A 55-year-old **male** patient with a history of **hypertension** was recently diagnosed with **Stage C heart failure** and echocardiogram shows **an ejection fraction 30%.** His current medications include sustained-release **Nifedipine** 40 mg daily, **digoxin** 0.125 mg daily, and **furosemide** 40 mg daily. **Currently** the patient's vital signs; **BP 150/90** and pulse **88** beats/min.

What is the appropriate drug therapy for this patient?

A. Add Enalapril 10 mg daily and Metoprolol 50 mg daily to current regimen
B. Add Metoprolol 50 mg daily to current regimen
C. Discontinue Nifedipine and add Enalapril 10 mg and Metoprolol 50 mg daily
D. Increase the dose of Nifedipine to 80 mg/d

- **Nifedipine**, sold under the brand name Adalat among others, is a medication used to manage angina, high blood pressure, Reynaud's phenomenon, and premature labor.
- It is one of the treatments of choice for Prinzmetal angina.
- It may be used to treat severe high blood pressure in pregnancy.

306. A 55-old **man** with a moderate **persistent asthma** came to OPD. His asthma symptoms began when he was 35years of age, and he has never smoked. He has had numerous drug regimens for his asthma over the year, but he tells a clinician that he wants the simplest regimen possible.

What is the most **appropriate choice** as controller therapy?

A. Inhaled short acting beta2 agonist
B. Inhaled corticosteroid
C. Mast cell stabilizer
D. Oral corticosteroid

- Inhalation corticosteroids are cortisone-like medicines.
- They are used to help prevent the symptoms of asthma.

- When used regularly every day, inhalation corticosteroids decrease the number and severity of asthma attacks.
- However, they will not relieve an asthma attack that has already started

307. A 70-year-old **woman** with **chronic obstructive pulmonary disease** has been on treatment taking **inhaled Albuterol** and **inhaled Beclomethasone** and admitted to the hospital more than three times over the past year for **chronic obstructive pulmonary disease exacerbations**. She has daily **cough with increased volume** of purulent sputum production and an **FEV1 of 40% predicted**. Previously, he used to smoke a pack of cigarettes daily for 40 years, but quitted a year ago. His oxygen saturation on room temperature is 90%.

What is most **suitable** therapy for this patient?

A. Clarithromycin 500mg bid for 10 days
B. Albuterol 2mg tablet daily for 1month
C. Continue the current medication
D. Oral prednisolone 40 mg daily for 1 month

- Clinical studies indicate that long term use of clarithromycin is effective in the treatment of COPD exacerbations with lower incidence of adverse effects.
- Medication approved for people with severe COPD and symptoms of chronic bronchitis is roflumilast (Daliresp), a phosphodiesterase-4 inhibitor.
- This drug decreases airway inflammation and relaxes the airways.

308. A 29-year-old **man** was **diagnosed** with **asthma** 6 months ago and was treated with **inhaled Albuterol** as needed. Since his last visit, he feels generally well and typically requires using his inhaler approximately two times per week and his frequency of night time awakening is ≤ 2 times/month. He is not on any other medications.

What is your recommendation at this time?

A. Low dose inhaled steroid
B. salmeterol twice a day
C. inhaled ipratropium
D. Should use only Albuterol PRN

- Steroid inhalers, also called corticosteroid inhalers, are anti-

inflammatory sprays or powders that you breathe in.

- They're mainly used to treat asthma and chronic obstructive pulmonary disease (COPD).

309. The **following** drug would be **preferred** when **treating acute moderate pain** in a 30-year-old **man** admitted to the **emergency** ward with **no significant medical** history and **on no medication.**

A. Acetaminophen Igm po PRN
B. Diclofenac 50 mg po PRN
C. Tramadol 50 mg IM PRN
D. Amitriptyline 25mg po PRN

- to relieve moderate to severe pain, tramadol is often prescribed in combination with non-opioid analgesics like paracetamol.
- Fixed-dose combination of tramadol and paracetamol gives rapid onset and long duration of action and multimodal analgesic effects.

310. A 65-year-old **female** with a **chronic obstructive pulmonary disease** exacerbation has recently been discharged from a hospital. This is the fourth

hospitalization in the past one year for similar problem, although the patient reports only mild symptoms in between exacerbations. The patient is on **Salmeterol inhalation** twice daily and **Ipratropium inhalation** once daily prior to her admission. Her current **FEV1 is below 55%.**

What is the most appropriate management at this stage?

A. Discontinue the Ipratropium and add Ipratropium /Albuterol fixed combination
B. Discontinue his current medication and add salmeterol/fluticasone fixed combination
C. Discontinue the Ipratropium and add tiotropium
D. Keep as it is

- The normal value for the FEV1/FVC ratio is 70% (and 65% in persons older than age 65).
- When compared to the reference value, a lower measured value corresponds to a more severe lung abnormality.
- **Fluticasone/salmeterol**, sold under the brand name Advair among others, is a combination medication containing fluticasone propionate and salmeterol.
- It is used in the management of asthma and chronic obstructive

pulmonary disease (COPD).

- It is used by inhaling the medication into the lungs

311. A 16 kg **child diagnosed** for **meningitis** was prescribed 50 mg/kg/day IV **antibiotics** in three divided dose. The drug was available in vial containing **200 mg of powder**. The **vial** was reconstituted to be a maximum concentration of 45mg/ml.

What amount of **volume** should be used for a single dose?

A.5.9 ml
B. 4.5 ml
C. 6.3 ml
D. 4.3 ml

-

312. A junior pharmacist started working in dispensary outlet. The pharmacist was guided by senior pharmacist on how to dispense medication including **labeling** and **packaging**.

What important **information** should be provided during **packaging** of **medicines**?

A. Suppositories should be packed in paper made containers
B. Ointment should be packed with paper made container
C. **Liquid should be light resistant glasses**.
D. Tablets should be packed with collapsible tubes

■

313. A 14 years **old child** was diagnosed with **tonsillitis** and the physician prescribed **amoxicillin** 500 mg **daily**. The pharmacist **dispensed** the medication with due counseling. One week later, the **patient came to the dispensary again** with a prescription indicating **the same disease**.

What was the most likely **reason** for the treatment **failure**?

A. The dose was lower than the recommended one

B. The frequency of the medication was wrongly prescribed

C. The frequency of taking the medication should be twice a day

D. The pharmacist might have wrongly dispensed Ampicillin

314. A 45 years old **female** patient came to a dispensary with a prescription of **amoxicillin** 500 mg po **TID** for 7 days. In the dispensary unit amoxicillin was available only in **250** mg strength.

How should the medicine be labeled before dispensing?

A. Take three capsule at a time with six hour difference

B. Take two capsules at a time with eight hour difference

C. Take six capsules at a time every twelve hour difference

D. Take three capsules a day every twelve hour difference

315. A 42 years old **male** patient was **diagnosed** with **psoriasis** and prescribed **Betamethasone propionate cream** 0.05%. The pharmacist **labeled** and **provided** the drug to the patient.

What **information** should a pharmacist include to **minimize** the **side effect**?

A. For external use only
B. To be applied thinly
C. Keep out of the reach of children
D. discarded if more than four months

316. A 60 years **old male** patient was diagnosed with **acute coronary syndrome** and took a prescription of

- Nitroglycerin sublingual 0.4 mg every 0.5 minutes
- Morphine PO 4 mg

- Aspirin 300 mg stat PO then 75 mg PO daily.
- Clopidogrel 300 mg followed by 75 mg Po daily.

Which medication should be **packaged** with a **tightly** fit glass?

A. Aspirin
B. Morphine
C. Nitroglycerin
D. Clopidogrel

- **Nitroglycerin** is a **volatile** substance which evaporates from tablets if strict precautions are not taken.
- The tablets kept in small, amber, tightly capped glass bottles in a refrigerator maintain their potency for three to five months if bottles are opened once a week.

317. Store pharmacist was conducting **annual inventory**. After finishing the inventory, the pharmacy **auditor** found out a **difference** between the **expected** and **actually counted** inventory and requested the pharmacist to reconcile the difference. However, the pharmacist **couldn't settle the difference**.

What was the most likely factor that the pharmacist missed?

A. Documentation
B. Requesting
C. Ordering
D. Double counting

318. A pharmacist working in a store was requested for **Nasogastric** tube through report and requisition form (RRF).

What should the store pharmacist consider before issuing the **requested** item?

A. Size
B. Length
C. Cost
D. Thickness

- A Nasogastric (NG) tube is a thin, soft tube that goes in through

the nose, down the throat, and into the stomach.

- They're used to feed formula to a child who can't get nutrition by mouth. Sometimes, kids get medicine through the tube.
- NG tubes are used for short periods of time, usually a few weeks to months

319. A 48 years old **man** was **diagnosed** with **deep vein thrombosis** and he was taking **Warfarin**. Today, he visits a clinic with chief compliant of fever. His white blood cell count (CBC) and renal function test were within the normal range. He was also **taking high** dose of **steroid** for **idiopathic systemic inflammatory** disease the physician suspected the patient had **systemic fungal infection**.

What antifungal drug is most appropriate for this patent?

A. Ketoconazole
B. Itraconazole
C. Grisofulvin
D. **Amphotercin B**

- **Amphotercin B** is a life-saving drug in the **treatment** of **serious systemic fungal infections** and is still the most widely used

antifungal in and intensive care, despite the development of a series of new antifungal agents, especially the second-generation triazoles and the echinocandins.

320. A 28 years old **asthmatic patient** on **Theophylline** therapy came to a dispensary in order to take **cimetidine 400 g** tablet PO BID for 10 days as per the physician's prescription.

What is the most appropriate recommendation for this case?

A. Lower the cimetidine
B. Reduce the dose of Theophylline
C. Increase the dose Theophylline
D. Replace cimetidine with famotidine

321. A 41-years old **man** with a history of **penicillin allergy** was diagnosed as **Pharyngitis** and **treated** with **clarithromycin** 500 mg BID for 7 days. **Besides**, he was

treated with **cyclosporine** 4 mg/kg per day for his **steroid-refractory severe colitis**.

Which one is the most likely **safety issue** of this treatment?

A. Ototoxicity
B. Renal toxicity
C. Liver toxicity
D. Ocular toxicity

■

322. A prescriber **consulted** a pharmacist that a **client** who is on **carbamazepine therapy** which is very **effective** medicine **wanted** to use **combined oral contraceptive,** the prescriber **suspected drug-drug interaction** and thus wanted to know the appropriate recommendation.

What is the most appropriate **recommendation** for this **client**?

A. Change carbamazepine with valproic acid

B. Decrease the dose of the oral contraceptive

C. Increase the dose of oral contraceptive

D. decrease the dose of carbamazepine

- A commonly used dose of CBZ decreased levels of contraceptive steroids, increased breakthrough bleeding and permitted ovulation during use of a low-dose OC.
- Women treated with CBZ are **not adequately protected from pregnancy by low-dose Oral contraceptive**.

323. A client came with the prescription containing **carbidopa/Levodopa**. The pharmacist **dispensed** the drug with the **necessary information**. The Client came back two weeks later with the **complaint** of **no improvement.**

What was the most likely message the pharmacist **missed during** counseling?

A. Avoid high fiber meal

B. Avoid high protein meal

C. Avoid high fatty meal

D. Avoid high carbohydrate meal

- **Protein** and **Levodopa** use **the same transporter** to cross the small intestine wall.
- Therefore it's possible that dietary protein can interfere with absorption of Levodopa including beef, chicken, pork, fish and eggs.

324. A 58-years-old **woman** was **diagnosed** with **aspirational** pneumonia and hence, treatment was started with **Ceftriaxone** 1 gm IV BID for 14 days and **Clindamycin** 600 mg IV TID for 14 days. After two days the patient **complained diarrhea** and **colitis**.

What should be the **recommendation** to **prevent** the patient compliant?

A. Replace Ceftriaxone by benzyl penicillin
B. Replace Ceftriaxone by amoxicillin/Clavulanic acid
C. Increase the dose of clindamycin and ceftriaxone
D. Replace Clindamycin by Metronidazole

- Many antibiotics, including **Clindamycin**, may cause overgrowth of dangerous bacteria in the large intestine.
- This may cause mild **diarrhea** or may cause a life-threatening condition called **colitis** (inflammation of the large intestine)

325. A nurse from **neonatal intensive** care unit came with an internal facility report and resupplies containing **alcohol for infection prevention** activities and requested **storage condition for the supply**.

What should be the most appropriate storage condition for the **tablet**?

A. Deep freezer
B. Cool area
C. Refrigerator
D. Moist area

▪

326. A 45 years old **male** patient came to the dispensary unit with the prescription of **nitroglycerin sublingual** tablet.
What should be the appropriate storage condition for the product?

A. In tightly closed plastic container
B. In tightly closed glass container

C. In refrigerator
D. In deep freezer

- Glass is 7 times heavier than plastic at the same volume, making it more costly to transport and fossil fuel intensive to move to its final location.
- Glass also uses more natural resources during production than plastic does despite glass being manufactured from a more renewable resource than plastic.

327. Many medications were **repeatedly stock** out in a hospital and patients forced to buy their medication from the private pharmacy. Patients complained the situation to a hospital manager and he/she confirmed that the problem prevailed due to **poor** documentation practice in the pharmacy.

What type of documentation is **missed** during **recoding**?

A. Type, strength and number of dispensed medications
B. Age and sex of patients using the dispensed drugs
C. Medical registration and prescription number
D. The prescribers and dispensers name and signature

328. A pharmacist in **charge** of **stock** management wanted to **update records I** order to **timely** monitor flow of stock.

What **should** be **avoided** while recording on stock card?

A. Using pencils
B. Using pen
C. Using inerasable ink
D. Using permanent marker

329. A **physician** requested a pharmacist a **brief summary** of **new antifungal drug "X**" in the **market**. **Unfortunately** the pharmacist **didn't** have any **information** about the "X" drug.

What is the most appropriate drug information **source** the pharmacist should **refer**?

A. MEDLINE, in-process
B. IOWA drug information system
C. International pharmaceutical abstract
D. PubMed database

- The **Iowa** Drug Information Service (IDIS) to promote better patient care through drug therapy by improved availability of drug information, to stimulate the effective use of drug information resources by pharmacists and physicians.

330. A **physician** requested **drug information** on a new story regarding **depletion** of serum **magnesium** among patient **prescribed** with long term proton pimp inhibitor. Data from manufacturer and/or post-market surveillance program revealed that adverse drug reaction **(ADR)** was not seen on the clinical trial.
What would be the best **internet source** for this issue?

A. www.clinicaltrails.gov
B. www.myoclinic.com
C. www.fda.gov

D.www.adis.com

331. A pharmacist **received** numerous packs of medicines as part of previous order. Upon **inspection** of the delivery, the pharmacist saw that one of the medicines was labeled as: "**Protect from moisture**"

What is the most appropriate storage condition for the medicine?

A. exactly 60% relative humidity
B. 60-80% relative humidity
C. Less than 60% relative humidity
D. 60%-75% relative humidity

332. A **tertiary** care hospital pharmacy uses fluid location system to stock pharmaceuticals. A junior pharmacist was assigned to organize the medicines so, the

pharmacist asked the store manager for **guidance** on how to properly classify the stock.

What is the most recommended method of stock classification?

A. Alphabetical order
B. Commodity code
C. Random bin
D. Dosage form

333. It is noted that clopidogrel is mor effective than Aspirin in preventing vascular events of ischemic stroke. in addition, Aspirin is an over the counter while Clopidogrel remains a by-prescription only medication.

What is the best reason for Clopidogrel to be a by-prescription only medication?

A. High cost
B. Clinical effectiveness

C. Adverse effect

D. Therapeutic class

334. A senior clinical pharmacist in a tertiary hospital frequently encounters an order sheet that states "**resume pre-op meds**" What is the most likely problem the pharmacist might recognize in these orders?

A. Omission of information

B. Poor prescription writing

C. Illegal prescription paper

D. Inappropriate drug selection

335. A 34-year-old patient who is taking **Warfarin** for the treatment of **deep vein thrombosis** came to the pharmacy and complained about **heartburn** for the last two days. The pharmacist, in consultation with the

physician, wanted to avoid a medicine that could interact with Warfarin.

Which drug would most likely increase the toxicity of Warfarin?

A. Famotidine
B. Ranitidine
C. Cimetidine
D. Omeprazole

- Over-the-counter cimetidine is used to prevent and treat symptoms of heartburn associated with acid indigestion and sour stomach.
- Cimetidine is in a class of medications called H2 blockers. It decreases the amount of acid made in the stomach
- Using warfarin together with cimetidine can cause you to bleed more easily. You may need a dose adjustment in addition to testing of your prothrombin time or International Normalized Ratio (INR).

336. A mother of 10-year-old **child** with **mild pain** come the dispensary with a prescription **stating** 81 mg of

Aspirin tab P.O. BID. What is the problem of this prescription?

A. High dose
B. **Wrong indication**
C. Route of administration
D. Frequency of administration

337. A physician has **diagnosed** a patient with interotoxigenic (cholera-like) **diarrhea** and prescribed 400 mg **Sulfamethoxazole** and **160 mg Trimethoprim** (Co-trimoxazole) twice daily P.O. for **three** days

What prescription **error** could be identified by the pharmacist?

A. inappropriate strength
B. Inappropriate frequency
C. Inappropriate frequency
D. Inappropriate route of administration

- **Sulfamethoxazole** and **Trimethoprim** combination is used to treat infections including urinary tract infections, middle ear infections (otitis media), bronchitis, traveler's **diarrhea**, and **shigellosis** (bacillary dysentery)
- for oral dosage forms (liquid or tablets):
- For treatment of bacterial infections:
- Adults—1 tablet (DS tablet) of **800 milligrams** (mg) of **sulfamethoxazole** and 160 mg of **Trimethoprim**, or
- 2 tablets of **400** mg of **sulfamethoxazole** and **80** mg of **Trimethoprim**,

338. A pharmacist who was **assigned** to **mentor** and **monitor** pharmacy students, observed one of the students about to dispense a prescribed medication. The prescription **dictates** a drug **for gastro-esophageal reflux** disease which is stated as "**Rabeprazole 20** mg cap qd for **10 days, use after a meal**". The pharmacist politely approached the student and made some corrections

What possible **modification could** be **made** on the prescription?

A. Dose of the drug
B. Frequency of administration

C. Duration of treatment

D.Direction to use

- You'll usually take rabeprazole once a day, first thing in the morning.
- If your doctor prescribes it twice a day, take 1 dose in the morning and 1 dose in the evening.
- **It's best to take rabeprazole before a meal**.
- Swallow your tablets whole with a drink of water or squash.

339. A patient **diagnosed** with **severe pneumonia** came with a prescription which **states 25mglkg/ BID for five days**. The drug is available in 500 mg /2mL formulation and the patient weight was 35kg

What quantity of drug should be administered at a time?

A. 1.75 mL

B. 3.5 mL

C. 5.25 mL

D. 7 mL

340. The physician prescribed **Naltrexone** 25 mg PO **initially** and then **tapered** doses to **100** mg PO every other day, if no withdrawal signs appear. The tablet. formulation on hand is **Naltrexone** 50 mg

How much dose the pharmacist should dispense as initial dose?

A.½ tablet
B. 1/3 tablet
C. ½ tablet
D. 2 tablets

341. A 3-year-old child **diagnosed** with **acute upper respiratory** tract infection was prescribed **Amoxicillin 250mg**/5ml PO **TID** for 7 days. The drug is reconstituted to a solution of **10mg/1mL**. A pharmacist advised the parents to use **teaspoon** for drug administration.

How much **Amoxicillin** solution would **one teaspoon** contain?

A. 150 mg
B. 75 mg
C. **100** mg
D. 50 mg

Each 5 ml dose of reconstituted oral suspension contains 500 mg of amoxicillin (100 mg per ml) in the form of amoxicillin trihydrate.

342. A primary health care provider prescribed 400 mg of Levofloxacin tablet PO daily for seven days. But the drug was available in 200 mg tablet formulation.

How many tablets should the patient take each day?

A. 2 tablets
B. 3 tablets
C. 4 tablets
D. 5 tablets

Answer Keys

Part I

1.C	2.D	3.D	4.B	5.B	6.D	7.B	8.D	9.A	10.D
11.A	12.A	13.B	14.C	15.D	16.A	17.B	18.B	19.D	20.B
21.B	22.C	23.A	24.C	25.A	26.D	27.B	28.A	29.D	30.B
31.C	32.B	33.B	34.B	35.C	36.A	37.C	38.B	39.D	40.C
41.C	42.A	43.D	44.A	45.B	46.C	47.C	48.C	49.C	50.A
51.B	52.B	53.D	54.C	55.C	56.C	57.C	58.C	59.A	60.D
61.B	62.B	63.C	64.A	65.D	66.B	67.D	68.C	69.B	70.B
71.C	72.A	73.D	74.C	75.D	76.D	77.B	78.D	79.B	80.C
81.C	82.A	83.C	84.D	85.B	86.C	87.A	88.A	89.C	90.A
91.B	92.B	93.C	94.C	95.B	96.B	97.C	98.D	99.D	100.D
101.A	102.A	103.D	104.B	105.A	106.C	107.A	108.C	109.A	110.A
111.B	112.A	113.A	114.C	115.C	116.C	117.C	118.B	119.A	120.B
121.B	122.A	123.A	124.A	125.C	126.B	127.C	128.B	129.D	130.A
131.D	132.A	133.C	134.D	135.C	136.D	137.A	138.D	139.C	140.C
141.D	142.A	143.C	144.B	145.C	146.B	147.C	148.C	149.B	150.B
151.D	152.D	153.C	154.C	155.A	156.C	157.A	158.C	159.B	160.A
161.B	162.A	163.D	164.D	165.C	166.A	167.B	168.A	169.B	170.D
171.A	172.A	173.A	174.D	175.A	176.A	177.B	178.C	179.B	180.D
181.C	182.A	183.B	184.A	185.C	186.C	187.A	188.C	189.B	190.C
191.A	192.D	193.B	194.B	195.B	196.C	197.B	198.D	199.C	200.C
201.D	202.D	203.C	204.A	205.C	206.D	207.B	208.B	209.B	210.D
211.C	212.C	213.B	214.C	215.D	216.A	217.D	218.C	219.B	220.B
221.D	222.B	223.C	224.C	225.C	226.A	227.C	228.C	229.D	230.B

231.C	232.C	233.B	234.A	235.A	236.C	237.B	238.A	239.C	240.C
241.D	242.A	243.A	244.C	245.A	246.A	247.C	248.C	249.B	250.B
251.D	253.B	253.C	254.C	255.C	256.D	257.C	258.A	259.C	260.C
261.D	262.C	263.A	264.C	265.C	266.B	267.B	268.C	269.C	270.B
271.A	272.A	273.D	274.C	275.B	276.D	277.B	278.D	279.C	280.A
281.A	282.C	283.C	284.B	285.D	286.B	287.B	288.D	289.A	290.B
291.C	292.C	293.D	294.C	295.C	296.D	297.A	298.A	299.C	300.B
301.B	302.C	303.A	304.C	305.C	306.B	307.A	308.A	309.C	310.B
311.A	312.C	313.B	314.B	315.B	316.C	317.A	318.A	319.D	320.B
321.B	322.C	323.B	324.D	325.B	326.A	327.A	328.A	329.B	330.A
331.C	332.D.	333.C	334.A	335.C	336.B	337.A	338.D	339.B	340.A
341.C	342.A								